

MADRAS RECORD OFFICE.

Government of Madras.

Revenue DEPARTMENT.

G.O. No. 186	Press ~~Mis.~~
19-20	
Dated	1-2-1865.

Not to be folded or roughly handled

*Proceedings of the Madras Government, Revenue Department,
1st February 1865.*

No. 19. Read the following Proceedings of the Madras Government in the Public Department:—

Stating that the recommendation of the Honorable Mr. Ellis, regarding the grant of remissions and advances to the Zemindars and Ryots of Masulipatam, will be considered in the Revenue Department. } (Here enter 25th January 1865, No. 111.)

No. 20. ORDER THEREON, 1st February 1865, No. 186.

Miscellaneous.

1. Communicated to the Collector of the Kistna District for early report, through the Board of Revenue, on the remissions and advances referred to in paragraph 9.
2. The Board will be good enough to give the matter their earliest consideration on receipt of Mr. Thornhill's proposals.

(True Extract.)

(Signed) C. G. MASTER,
Under Secretary to Government.

To the Board of Revenue,
„ the Collector of the Kistna District, } with Proceedings Public Department, No. 111.

Exd. S, T. Augustin.

*Proceedings of the Madras Government, Public Department,
25th January 1865.*

Read the following papers:—

No. 166. From the Honorable R. S. ELLIS, c. b., President of the Sanitary Commission, Madras, to the Honorable A. J. ARBUTHNOT, Chief Secretary to Government, Fort Saint George; dated Masulipatam, 17th December 1864.

I have the honor to enclose my report on the sanitary measures adopted, or recommended, for the protection of the public health of the town and station of Masulipatam, after the cyclone of the 1st November 1864.

2. As this report is of considerable length, I beg briefly to re-capitulate the different subjects noticed therein, which require the orders of the Government.

1st.—Sanction is solicited for the expenditure of Rupees 10,177, of which 8564 Rupees have been actually disbursed by me, from advances made to me from the Collector's Treasury. The detailed accounts of this expenditure are contained in Appendix E of my Report.

A sum of Rupees 1613-7-0 is required to pay the conservancy establishment for the month of December, and to complete the work of clearing some of the smaller lanes, and to pay a small gang of coolies, who will be employed till the 31st of December in discovering and burying corpses and remains of animals, which may still be under the ruins of some of the houses and buildings in the town.

3. I have placed this sum, Rupees 1613-7-0, at Mr. Brandts' disposal, and have requested him to furnish a detailed account of its expenditure, and to re-pay into the Treasury any balance unused on 31st December. Mr. Brandt has throughout assisted me in carrying out the sanitary measures required, and has, at my request, been placed by Mr. Thornhill, from this date, in charge of the establishments specially entertained for the public health and conservancy of the town, of which Mr. Brandt has also the Magisterial charge.

2nd.—I have also to request the sanction of Government to a fixed conservancy establishment for the town and station of Masulipatam and for the Fort, as detailed in the margin, at a cost of Rupees 963 per mensem. I propose that this establishment should be paid by the Government for twelve months, at the end of which time, this charge should be met by a Municipal rate. I have, in my report, given the reasons which appear to me to justify this proposal.

Conservancy establishment for the Town and Fort of
Masulipatam.

	Rs
1 Conservancy Inspector at 50 Rupees per mensem.	50
1 Writer at 12 Rupees	12
* 16 Carts at 30 Rupees	480
32 Scavengers at Rupees 5	160
* 26 Public Latrine scavengers at Rupees 7	182
9 Conservancy Peons at Rupees 6	54
Sundries.....	25
Total.....	963

NOTE.—*This is the lowest rate at which carts and scavengers of this description are procurable in the Kistna District.

3rd.—I have also the honor to request the orders of the Government on the works proposed for the drainage of, and for the supply of fresh water to, the town and station of Masulipatam. Both of these works are most urgently required, especially that for bringing the Kistna water into the town. Any delay in the execution of this work will cause severe suffering to the inhabitants. They are dependent for their drinking water on the few wells which have not been destroyed by the salt water, and these will not be sufficient to supply the town during the hot weather.

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4th.—I have also to request the sanction of the Government to the rewards which I have recommended should be given to the Native gentlemen mentioned in my report, for their good service during the trying time that followed the cyclone of the 1st November last.

Report of the President of the Sanitary Commission, on the measures adopted for the protection of the Public Health of the town and station of Masulipatam, after the Cyclone of the 1st November 1864.

Before detailing, for the information of Government, the sanitary measures taken since my arrival at Masulipatam on the 17th ultimo, I beg to submit a brief narrative of the principal facts connected with the disastrous cyclone of the 1st November.

1. Enclosed are two maps:—The map marked A. shews the relative positions of the Fort, Town, and Cantonment, of Masulipatam. The map marked B. exhibits the extent of the inundation in the Divi and Repalli Divisions.

2. The portion of this map which is colored blue represents the inundated tract of country.

3. From a report furnished by the Master Attendant, who was in the Fort, during the storm, it appears that soon after day-light, on the 1st November last, the weather had assumed a threatening appearance, and that as early as 8 A. M. the Barometer was falling with every indication of a gale from the N. N. E.

4. From noon till dusk, the wind continued to increase in violence, and at 7 P. M. it was blowing a hard gale from the N. E.

5. The Barometer at 8 P. M. had fallen to 29.500. The roofs of the houses in the Fort were nearly all off, and the doors and windows were blown in. About 10 P. M. the wind veered round to about E. N. E., and the terrible fact that the sea had broken into the Fort became known. After this, the rise of the sea was very rapid with a heavy swell.

6. About half past 10 P. M. the water was probably at its greatest height, the wind blowing in fearful gusts. Then came the return of the sea wave, with a roaring sound of waters which is described as awful.

7. After 11 P. M. the sea water began to decrease in height and gradually subsided. By this time all except the pukka built houses in the Fort, and the Barracks and Hospital, had been washed away, and about 1500 souls had perished. It must be remarked that the tide had risen early in the night of the 1st of November much above its usual height; the deluge of rain which was falling soon after dusk probably prevented this being noticed. In ordinary weather it is high water on the bar on full and change of the moon at 20 minutes after 9 P. M., and at the Tidal Lock at 10 P. M. There seems little doubt that, on the 1st November soon after dusk, the tide had begun to find its way into the Fort by overflowing the Lock.

8. This unusually high tide was probably caused by the water being driven into this bight of the Coast before the gale.

9. The centre of the cyclone was probably a very short distance to the south of the Fort and Town, and the storm wave, driven by the gale, had every facility given to its passage over the Fort and Town of Masulipatam by the extraordinary height of the spring tide. This will account for the great height of the storm wave, and the great destruction which it caused.

10. The return of the wave was almost as rapid as its approach, and completed the work of destruction.

11. It is estimated from levels that have been taken that the sea rose between 12 and 13 feet above the level of ordinary high water. It was remarked that the sea water was of an unusually high temperature, and so phosphorescent that each wave as it broke gave a flash of vivid light.

12. The water brought with it a peculiar and unusual deposit of thick slimy mud, which now covers a large surface of the country.

13. The effect of the inundation on the Masulipatam back water is stated by Captain Maiden, the Master Attendant, to be very remarkable.

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14. The beach is entirely changed; the long sand spit which has for years been extending northward has disappeared entirely, by which the distance from the Fort to the Sea has been shortened more than a mile.

15. In short the approaches by sea to Masulipatam are the same as those shown in the survey made by Mr. Topping in 1792.

16. It is difficult to convey by any written description the disastrous effects of the cyclone. The violence of the wind would in itself have caused great destruction to property, but preceded as it was by heavy rains, accompanied by an inroad of sea water, the storm swept with fatal violence over the Fort, and the Town of Masulipatam. The Coast north and south of the Town of Masulipatam, was inundated by the sea water over a space of country which may be roughly stated as eighty miles in length by nine miles in breadth. In one direction the storm wave reached to a place seventeen miles inland; and after actual computation it is found that no less than seven hundred and eighty square miles of country were more or less affected by the disastrous inroad of the sea.

17. All the houses both in the Fort and the Town which were reached by the wave, and which were not built on substantial basements, came to the ground, the unfortunate inmates being in most cases either drowned, or killed by the fall of the roofs.

18. To add to the horror of the scene the night was excessively dark, and the wind so violent that it was difficult for strong men to move from the falling houses without being thrown down. When the inhabitants of the Fort and Town became aware that the water which rose rapidly in their houses was from the Sea, many of them endeavoured to take refuge in the more substantial buildings in their neighbourhood. But in most cases, the instant they quitted their houses they were carried away by the flood, and perished by drowning, or by being driven against trees and buildings.

19. The violence of the wind and flood may be conceived from the huge blocks of solid masonry forming part of the causeway between the Fort and Town being rolled to a distance of sixty feet, and by the extraordinary number of Palmyra trees blown down, or broken off about their middle. Large logs of timber, cargo boats, and the remains of wrecked vessels, were carried by the storm wave among the houses of the town and station. These caused great destruction to substantial buildings, which might otherwise have resisted the storm.

20. Some of the escapes during the storm were extraordinary. Whole families lay crouched on the roofs of the fallen houses, and after hours of exposure were rescued. In some cases those who were driven by the flood against trees were able to climb out of the reach of the water. Others were washed two or three miles away from their houses clinging to beams, and were thus saved from drowning. I believe that I am not exaggerating when I estimate the loss of life in the Town and Fort at 15,000, being about one-third of the entire population. In one Brahmin village, on the outskirts of the town, out of a population of nearly 700 only 70 survived. Several heavy boats were lifted bodily out of the canal, which is near this village, and remain high and dry among the ruins of the houses, which are mere heaps of rubbish covered by a tangled mass of trees.

21. The cyclone which caused so terrible a loss of life in the town was hardly less destructive in the Civil Station and in the Lines of the 19th Regiment N. I.

22. The Lines of the 19th Regiment present as complete a scene of desolation as can well be imagined. Not a single Sepoy's hut was standing on the morning following the storm. Fifty-six Sepoys of the 19th Regiment N. I., and three hundred of the Sepoys' relations were drowned. Those that escaped took refuge in the Barrack (place of arms) and Hospital, which are well built brick buildings, and were not much injured by the storm.

23. The Police Force also suffered greatly: twenty two men of the Force were drowned, and two hundred and twenty-three of their relations. Both the Sepoys of the 19th Regiment and the Police lost every thing they possessed.

• 24. The Europeans, all of whom escaped, owed their preservation to the superior construction of their houses, and to the height of the basements.

25. The sea water rushed into all the lower rooms of the houses in the station, causing a complete destruction of the property contained therein. Most of the houses were more or less unroofed, and the deluge of rain which fell during the night completed the loss of property which had taken place in the lower stories.

26. All the godowns, out-houses, and stables fell, and to this is owing the great loss of life that occurred among the domestic servants. Most of these, when the storm was at its height, were crushed to death by the falling roofs, or were drowned in attempting to swim from the godowns to the houses.

27. The furniture, camp equipage, horses and carriages belonging to the Officers, Civil and Military, of the Station, were with few exceptions entirely destroyed.

28. I have visited most of the houses of the Cantonment, and can bear witness to the extent of the destruction of the property of their late inmates. It is no exaggeration to say that, with few exceptions, the residents of the station and the officers of the 19th Regiment will have to re-fit themselves completely in furniture, horses, carriages, and camp equipage.

29. The destruction of the roads and trees has been great. The station, which previous to the storm was a pleasant looking place with well made roads and trim avenues of trees, presented on my arrival a most melancholy aspect. The whole place was covered either with water or a thick deposit of black mud. The roads were almost entirely effaced and covered with broken trees and masses of prickly pear, while the houses looked in their ruinous condition as if the station had been abandoned for years.

30. Colonel Anderson is busily occupied with the drainage of the station. The broken trees and drift are rapidly disappearing. Roads are being repaired and channels dug, and the water is being rapidly drained away.

31. It will be many years, however, before the Fort and Town and the Station of Masulipatam lose the traces of the terrible cyclone of the 1st November last.

32. The destruction of life and property was equally great among the villages that came within the combined influence of the cyclone and of the sea wave. I visited, in company with Captain Hasted, R. E., and Mr. Brandt, the Special Assistant Collector, a considerable number of these villages. Our object was to carry assistance to the villagers, and to ascertain by personal inspection the effect of the late storm. Our march is indicated by a red line in map B.

33. We found a great number of these villages entirely destroyed; the crops are all ruined, and the whole of the cattle lost. The ground is covered for miles by a thick coating of saline mud. The loss of life in these villages has been terribly great. We were at some trouble to ascertain what the number of inhabitants had been previous to the storm, and the number of survivors in the 27 villages which we visited. In these villages, out of a population numbering 10,320, only 4893 survive. This will give some idea of the nature and extent of the disaster wherever the flood extended. Of the total loss of life in the portions of the Repali and Bunder Taluqs which have been inundated, I am unable to give any reliable estimate. The Police and Taluq officials are preparing returns, which will shortly be submitted to Government. It is not in my power to give any adequate description of the misery presented by this part of country. Much had been done to get the corpses of the dead buried; but on the line of our march there were great numbers of corpses still lying in the marshes, and in the neighbourhood of the villages. We were able to form some idea of the destruction that had taken place among the cattle by the carcasses that lay thickly on some of the swamps through which we passed.

34. The survivors in the villages which we visited bore unmistakable marks of the hardships which they had undergone since the night of the storm. Our arrival rescued them from much suffering. We distributed aid in grain and money, and, what was still more cheering to the unfortunate sufferers, Captain Hasted at once organized working gangs of all who were able to work. These are still usefully employed in the repairs of tanks, and on the river embankments, which have been much damaged by the storm. A system of relief has also been organized in some of the central villages, for the support of those who, from age and infirmity, are unable to labor.

35. When it is remembered that in one night the inhabitants of these villages have been reduced from comfort, and in some cases affluence, to the most abject state of poverty, their patient endurance of suffering, and their universal abstinence from crime, cannot but excite admiration and respect.

36. The land in the tract which is marked *blue* in the map B, has been so covered with the saline mud deposit, that it is doubtful whether any cultivation can be advantageously resumed at present. Whenever this can be done, it will be necessary that advances should be made to the ryots to enable them to purchase ploughing cattle and seed grain, all of which have been destroyed. Mr. Thornhill, the Collector of the District, is occupied in framing a well considered proposal on this subject, which will be submitted to the Government.

37. Having endeavoured to convey something of the reality of the scene of this terrible disaster, I will proceed to detail the measures taken by me as President of the Sanitary Commission for the preservation of the Public Health in the Town and Fort of Masulipatam.

38. But before doing this, I trust that I may be permitted here to express my sincere admiration for the energy and excellent judgment exhibited by Mr. Thornhill, the Collector, in every measure which he has taken since the occurrence of the storm on the 1st November.

39. It is seldom that so great a call is made upon an officer of Government, as that to which Mr. Thornhill has so ably responded. In his anxiety to create no unnecessary alarm, and to guard against exaggeration, Mr. Thornhill, in his earlier reports, understated, I think, the extent of the calamity, and the difficulties with which he had to contend. On the day following the storm it was necessary to provide food for the town, to clear the wells from salt water and to sink fresh wells, to bury the dead lying in hundreds in all parts of the town, and above all to restore confidence to the panic-stricken inhabitants, and to guard against crime which so generally follows upon a public calamity. All of this was done most effectually.

40. Mr. Thornhill received great assistance from Colonel Nott and the Officers of the 19th Regiment, Colonel Anderson and Captain Hasted of the Engineers, Major Tireman, Assistant Commissary General, Captain Frazer of the Police, Mr. Brandt the Assistant to the Collector, and Doctor Robertson the Civil Surgeon.

41. From the day following the storm these officers headed parties of Sepoys, Police, and hired coolies, and by their own personal exertions set the example which was so necessary in performing the repulsive duty of burying the decomposing corpses of the many thousands who had perished in the storm.

42. The Natives of the town took heart when they saw how cheerfully these officers were working for their protection, and all classes joined in the continuous labor which was necessary to prevent the out-break of pestilence. The same work which was necessary in the town was equally required in the Fort, and was most ably performed by Captain Bowen of the 19th, with a detachment of that Regiment, and by Captain Maiden, the Master Attendant, whose conduct during the whole of this trying time has been deserving of high praise. When I mention that 1000 of those who perished in the storm were* buried in the Fort and its immediate neighbourhood, the emergency of the work and its trying nature will be appreciated.

43. I hope I may be excused for entering into this detail. The excellent service done by these officers will certainly not be made known by themselves, and I avail myself of this opportunity of bringing these facts to notice.

44. For purposes of sanitation, I divided the Town and Station of Masulipatam into six separate Districts, which were personally superintended by myself. The Fort, distant three miles from the Civil Station, formed a separate charge, of which Dr. Montgomery, the Secretary of the Sanitary Commission, was in special charge. The work to be performed was divided as follows:—

1st.—Cleaning the roads of fallen timber and the ruins of houses.

* It would of course have been desirable on sanitary grounds that the corpses found both in the Fort and Town should from the first have been burned instead of being buried. But this was not feasible, from the impossibility of procuring, immediately, dry wood, in sufficient quantity to consume such a great number of bodies. The corpses found since my arrival have, with few exceptions, been burnt.

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2nd.—The drainage of the sea water, and, where absolutely necessary, the removal of the deep mud deposited on the highways.

3rd.—The burial and burning of corpses, and of the carcasses of animals.

4th.—The erection of public latrines, in sufficient numbers and in suitable localities.

5th.—The thorough cleansing of the streets morning and evening.

45. Precautions were also taken to prevent the sale of grain and other food rendered unfit for consumption by the salt water.

46. I have now been occupied for more than three weeks in this work, and I can safely affirm that all that was planned for the protection of the public health has been thoroughly executed. The roads and streets are now cleared of all the "debris" of the storm. The salt water has been drained off. Every effort has been made to find the corpses which were lying hidden among the ruins of houses and drift wood: that this has been successfully done is evidenced by the large number of corpses found. One hundred bodies have been burnt or buried daily, and I hope that few corpses of men or remains of animals will be left to taint the air, and endanger the health of the town.

47. The precaution has also been taken of re-covering carefully the graves of those who were hurriedly buried immediately after the storm.

48. Rewards have been offered for the destruction of the dogs and pigs in the town, which have been for the last month feeding on the corpses and carcasses of animals. Public latrines have been established in all parts of the town, and strict attention is given to the prevention of nuisances.

49. The inhabitants of the town show every disposition to avail themselves of the assistance given to them for securing the cleanliness of their houses and streets, and I am informed that the Town and Fort are cleaner at this present time than they have ever been.

50. The total amount expended by me in carrying out this work is Rupees 10177, of which the details are given in Appendix E.

51. This includes the cost of the conservancy establishment of the Town from the 18th of November last, until the 31st of the present month.

52. It will not be necessary after this month to employ any establishment except what will be required for the usual conservancy of a large Native town, namely, carts and sweepers for the cleansing of the streets, and scavengers for the public Latrines. The cost of these establishments will be Rupees 963 per mensem.

53. The sum of money which I have expended on my own responsibility, is undoubtedly large, but is not more than was absolutely necessary to secure the object aimed at, which was the speedy restoration of this large Native city to a condition favorable to the public health.

54. I fear that I have failed to convey in this report the extraordinary state of the roads and streets of a town, the greater portion of which was in ruins. I can however assure the Government that I have most anxiously guarded against any unnecessary expenses, and that the daily disbursement of the money to the laborers has been carefully checked.

55. It is also an advantage that the money thus expended has usefully employed a very large number of the poorer inhabitants, who must otherwise have been supported by charity.

56. Although the health of the Town and Station of Masulipatam has up to this time been excellent, more than usual care, will, for the next few months, be required to guard against epidemic disease.

57. The inroad of the sea has rendered unfit for use many of the wells which hitherto supplied drinking water to the town. These wells at no time afforded a sufficient supply of pure water, and the disease, "beri beri", which prevails here is attributable to the use of impure water.

58. After the cyclone of the 1st November last, many thousands of human beings and great numbers of cattle were buried in and about the town. This makes it absolutely necessary that special attention should be paid to the water supply and drainage of the town, and to its conservancy.

59. Neither the water supply nor the drainage of this large town have hitherto received the attention which they require. If these requirements are now liberally provided for, I believe

that, without any risk, the station of Masulipatam may with advantage be retained both for Military and Civil purposes. Without this provision, I think that there will be a considerable risk of severe epidemic sickness, as a consequence of the cyclone.

60. The drainage and water supply of a large Native town would, under ordinary circumstances, be fairly charged to Local and Municipal Funds; and some months ago it was under contemplation to have brought Masulipatam under the operation of Act XXVI of 1850. Under this Act, a rate could have been levied, which with the aid usually granted by Government to supplement Municipal Taxes would have furnished the necessary funds to defray the cost of these works.

61. The inhabitants of Masulipatam have suffered so severely from the effects of the cyclone that it would, I submit, be unwise to levy any new tax at present from them. On these grounds, it will, I trust, be decided that these works shall be executed by the Department of Public Works, and that the cost of the public conservancy shall be borne by Government for a period of twelve months. At the expiration of this period, the cost of permanent establishments required for conservancy, the repair of the drains, and any further works of public utility, may fairly be met by a local cess.

62. Colonel Anderson is preparing plans and estimates for the supply of water, and the drainage of the Town and Station of Masulipatam.

63. These are roughly shewn in the Map A., and in the Appendix C., which accompany this Report. The total cost of the water supply is estimated at Rupees 45,338, and this is very nearly correct. The probable cost of the drainage is roughly estimated at Rupees 28,250.

64. These projects undoubtedly entail a very considerable expenditure; but, putting aside the necessity of mitigating the sufferings of a very large Native city which cannot be removed from its present site, and which will, without good drinking water and without drainage, probably be exposed to extraordinary epidemic disease, it must be remembered that the removal of the Civil Station and Cantonment of Masulipatam to any other locality within the Kistna District would be attended with very great expense. I would respectfully submit that it will be better to secure the health and comfort of the existing station and Cantonment of Masulipatam, and with it the well-being of the large Native population of the town, by the works proposed by Colonel Anderson, than to abandon the town and to construct a new station in some other part of the District.

65. It is unnecessary to enter further into the question of abandoning Masulipatam as a Civil Station, as the Government have before them a paper drawn up by Mr. Thornhill and myself on this subject. I would merely wish to state that if the works projected by Colonel Anderson are sanctioned by the Government, I believe that on sanitary grounds Masulipatam may safely be retained as a Civil Station and a Military Cantonment, and that without these works a very considerable risk will attend the continuance of this place as a Civil and Military Station.

66. The pleasantest portion of my work here has been in superintending the distribution of the food and clothing despatched by the Government on board the Steamer *Arabia* last month, and of the clothing subsequently sent on board the Steamer *Asia*. Both food and clothing were urgently required, and have supplied the wants of the poorest class of sufferers by the late cyclone, European, East Indian, and Native.

67. I have also had much pleasure in giving my assistance to Mr. Thornhill and the other Members of the Masulipatam Cyclone Relief Committee, in determining upon the most useful means of expending the funds at their disposal.

68. The wants of a large number of the poor in the Town and Fort, who are unable to work, have been relieved. This relief has been given in the form of cooked and uncooked grain, and, in a few cases, small sums of money have been given so as to enable the more respectable families, who were in extreme want, but who, from caste or class prejudice, were unwilling to attend the public cook-houses, to tide over the first pressure of their affliction.

69. The greater portion of the subscriptions, supplemented as they have been by the very liberal grant of the Government, has been devoted to assisting the poorer inhabitants of the Town in re-building their houses. This employment of the money is much approved of by the Native members of the Committee, and is probably the most useful that could have been devised.

70. The re-building of those portions of the town which were destroyed by the storm has commenced, and has been much hastened by the sums distributed, under sufficient control, by the Members of the Relief Committee.

71. Advantage has been taken of this opportunity to persuade the people who inhabited the Pettahs, which have principally suffered, to remove to higher ground. In the new Pettahs the houses will be constructed on a uniform plan, which provides sufficient space for each house, a broad roadway, and good drainage.

72. While the urgent wants of the inhabitants of the Fort and Town of Masulipatam have been provided, the Relief Committee have not been unmindful of the great suffering which has fallen upon the inhabitants of the neighbouring villages.

73. Relief in clothes, grain, and money have been sent to them, and although more important relief will be required before cultivation can be resumed in these villages, it is satisfactory to know that they have been rescued from utter destitution.

74. In conclusion, I beg to bring to the notice of Government the great assistance which has been given to me by the Native gentlemen whose names are marginally entered. M. Sabapati

- 1 M. Sabapati Naidoo.
- 2 Munshi Abdul Raheem.
- 3 Chavali Gooroomoorti.
- 4 M. Oodiahchellum.
- 5 A. Vardava.
- 6 M. Kotelingam Naidoo.
- 7 C. Vencatachellum.

Naidoo, the Sheristadar of the Small Cause Court, volunteered his services to Mr. Thornhill, immediately after the cyclone, to assist in the burial of the dead, which was most urgently required. Since my arrival at Masulipatam, he has most zealously assisted me in all the

work done to secure the public health of the town. He was placed by me in charge of the large gangs of coolies who were at work in the several parts of the town, and directed, under my orders, all the arrangements connected with the conservancy.

75. Not the least of Sabapati Naidoo's services has been the excellent example he has set to the Natives of this place, in showing them that a man of superior education, and in a high official position, did not consider his respectability compromised by personally assisting in work, which, though absolutely necessary for the public welfare, was of a most disagreeable kind.

76. He has now been relieved of these duties, and has returned to his ordinary official work. I earnestly solicit that the Government be pleased to convey to M. Sabapati Naidoo some mark of their approbation, and suggest that a gold bangle be presented to him by the Government, for service rendered on the occasion of the late cyclone.

77. The other Native gentlemen, whose names I have mentioned, are Moonsiffs of the Town of Masulipatam, and have also done excellent work. They may, I think, be fitly rewarded by the presentation of a silver bangle, and a sum of 50 Rupees each. I propose that Munshi Abdul Raheem, who is a well educated and active man, be placed with a salary of 50 Rupees per mensem at the head of the Conservancy Establishments of Masulipatam, which I have recommended should be maintained by the Government for a period of 12 months. Before making these recommendations, I have consulted Mr. Thornhill, the Collector, who concurs fully in what I have written.

78. Although I have selected these Native gentlemen for special reward, it is only just to mention that all the subordinate officials of this station have most cordially assisted Mr. Thornhill and myself, in the additional work which has been necessary in consequence of the cyclone.

MASULIPATAM,
 17th December 1864.

(Signed) R. S. ELLIS,

*President of the
 Sanitary Commission.*

APPENDIX C.

MEMORANDUM by Lieutenant Colonel Anderson, R. E., regarding Channel for supply of drinking water for the Town of Masulipatam.

1. It is proposed that this channel should leave the Masulipatam canal at Awkumurroo, starting with a level of bed of 7' above ordinary H. W., and lead to the bridge across the Sultan-agram swamp, where the bed will have a level of 6 above H. W.

2. I intended at first to have commenced with the bed 5' above H. W.; but I found this would not give a sufficient head of water for the supply of the town. The expense with the higher level will be considerably greater, heavy embankments being required throughout.

3. This open channel will be suitable for irrigation. A considerable extent of land will be commanded by it; and I think it may be classed as an agricultural work, and its cost charged to the Delta project.

	Rs.
* Earth work.....	6,215
Turfing.....	1,051
Sundries	364
Head Sluice.....	800†
3 Irrigation Sluices at Rupees 100.....	300†
3 Accommodation Bridges at 765.....	2,295
Total Rupees...	11,025

4. The estimates for the channel and subsidiary works, which have been drawn up by Captain Hasted, amount to Rupee 11,025,* the details of which have been accurately computed, excepting as regards the sluices.†

5. The Sultanagram Bridge must in any case be re-built. I propose to construct a new bridge, 12 vents of 8 feet each, a few yards in advance of the old one; to curve the rear wing walls into the curved approaches to the latter, which are uninjured, and to form these into cisterns; and to conduct the water across through openings in the wing walls of the new structure, and along a small sheet iron trough, 2½ feet wide and 3' high, laid along the prolongation of the tops of the piers.

6. The cistern on the west side will be furnished with an escape for surplus water, and where the water will enter the conduit leading across the bridge, a shutter will be fitted for regulating the supply. The ordinary depth in the cistern will be 2' but it may be raised to 3', if required, or 9' above H. W. level.

7. The cost of the new bridge will amount to Rupees 14,100, and should of course be charged to "communications": the iron conduit and cisterns will probably cost 2500, which, however, is only an approximation, as I am unable to prepare a detailed estimate.

Rupees 2500.

8. From Sultanagram bridge to Robertson Petta, a distance of exactly one mile, it is proposed to carry the supply of water in a covered masonry conduit, 1 foot wide and 1' 6' high.* The quantity it will deliver in 24 hours will be 64,800 cubic feet, or 4,03,700 gallons, equal to the supply of 15 gallons per head to about 27,000 people; which quantity may be increased by raising the head of water: estimate † Rupees 10,560.

10,560.

9. A circular cistern 100 feet in diameter to be constructed in the centre of the large square at Robertson Petta: estimated cost Rupees 2370;—and from it the water will be distributed along the streets to the left and in

Rupees 2370.

front by covered masonry conduits, 9 inches wide and 12 inches high, as shown by red lines in the accompanying map. One branch will terminate near St. Mary's Church, on the precincts of the station: length one mile.

10. From Robertson Petta, the length of pipe to the principal street is 350 yards, the line to the right (or west) along the latter is 1250 yards, and a branch 200 yards, while that to the left which will proceed as far as the Jail will be a mile. The total length of distributing conduit will thus be 3 miles and 40 yards. The estimated cost is 4 Rupees per running yard, and the aggregate will therefore be 21,280 Rupees... .. Rupees. 21,280

12 Cisterns of 30' diameter are allowed at the principal crossings: the cost of each Rupees 330, or of 12, Rupees 3960... .. Rupees. 3,960

12 Culverts are also allowed for passing drainage water: estimated cost 12 x 224=2668... .. „ 2,668

11. To the above has to be added the cost of levelling the roads traversed by the conduits and raising them in places, which will probably amount to 2,000 Rs... .. 2,000

12. Recapitulation of estimate.

11,025	1. Open channel from Aukumurru to Sultanagrum bridge, to be charged to Delta project as an agricultural work.	
14,100	2. New bridge across Sultanagrum swamp, to be charged to communications.	
	3. Cisterns and iron aqueduct at Sultanagrum bridge.....	2,500
	4. Masonry conduit from bridge to Robertson Petta.....	10,560
	5. Cistern at Robertson Petta.....	2,370
	6. 3 Miles 40 yards of distributing conduits.....	21,280
	7. 12 Cisterns.....	3,960
	8. 12 Culverts.....	2,668
	9. Levelling and raising road.....	2,000
		Total Rs... 45,538

13. Any thing further that may be required may, I think, be left to private contributions, aided by grants from Local funds.

14. What is now proposed will bring the water within a quarter of a mile of any portion of the town, excepting Chintagoontapollem and two or three other sections of the Petta adjoining, which however being intersected by the main line of canal will be able to draw a supply from it.

15. Arrangements will be made for keeping up the supply throughout the year. It is customary to close the main Channels for 3 months for clearance. But it is only the upper reaches where heavy repairs are required; and while the higher portion of the Masulipatam canal is closed, a supply may be thrown into it at Pamurroo by means of other channels.

16. It is proposed to open out a new line of canal to Munganapudi Salt Cotaur. It would follow the line of the old Chinnapoor canal as far as the Petta Basin, and from thence it would be carried at a short distance from the station. If this project is sanctioned, facilities for procuring good water on the part of the inhabitants in its vicinity would be increased.

(Signed) J. C. ANDERSON, Lieutenant Colonel, R. E.,
Superintending Engineer, 2nd Divison.

MASULIPATAM, 12th December 1864.

APPENDIX D.

Memorandum on the drainage of Masulipatam by Lieutenant Colonel Anderson, R. E.

The drainage of Masulipatam has always been very defective. During the rainy season, the front swamp was full at times up to the borders of the Town and station, while there has been no outlet for the water from the Sultanagrum swamp.

2. Measures have been lately devised for improving the front swamp. Drainage channels to lead the water to the sluice adjoining the Tidal Lock, have been sanctioned, and would have been in progress at this time, had it not been for the destruction of the sea dyke and other works by the cyclone of 1st November. When the dyke shall have been restored, there will be nothing to prevent the front swamp being properly drained, and it will then afford a more efficient outlet to the Town drainage than it has been heretofore.

3. The Sultanagrum swamp water passed across the Masulipatam canal by an under tunnel, and proceeded along the low land west of Sevagunga and Gollapollem, as far as Gungdadapollem, where a portion of it escaped; but nothing has ever been done to improve the outlet, and the swamp still remains in its primitive state of enormous extent, 12 or 13 miles long, and in some places more than a mile wide, submerging land which would otherwise be valuable and producing noxious exhalations as it dries up.

4. The more effectually the swamp is drained, the more easy will be the disposal of the drainage from the town and station. It would form a better outlet than the front swamp, as the channels leading to it would pass through a less width of Petta, and the water would be less liable to obstructions; and besides the levels would be more favorable.

5. I would strongly recommend the improvement of the swamp by deepening the bed from the Sultanagram bridge to the Masulipatam canal, and onwards to the head of an ancient water course (now quite choked up), and by the excavation of a new channel from thence to the Tidal Creek. The water would then be effectually disposed of, and not the slightest difficulty experienced in thoroughly draining the town. The cost would be considerable as systematic drainage projects generally are. The following is an abstract of the estimates.

Excavating a channel 30 feet bottom width with level of bed 1 foot below H. W. from Sultanagram bridge to Masulipatam canal.....	rs. 2,000
New under Tunnel 10 vents of 8 feet span, for passing swamp water across Masulipatam canal (chargeable to canal).	
Excavating a channel similar to the above to head of Mungalairoo bed 2' below H. W.....	3,250
Excavating a channel 30 feet bottom width bed 4 feet below H. W.....	17,000
Sluice at head of Mungalairoo, to regulate discharge and prevent ingress of tidal water.....	6,000
(Approximate Estimate).	Total... 28,250

6. At present there are three main drains in the town and station, two to the front swamp, passing respectively by the Jail and through Oakes Petta, and the third through Edapilly to the Sultanagram swamp. These all require to be widened and deepened, and space is required clear of the margin to allow of the earth being carried well away from the channel.

7. The destruction of houses in the town by the late storm will allow of this being done at a moderate expense. Little else is required for the drains to the front swamp. An additional drain may be opened with advantage through Oakes Petta, and another from the hollows in rear of the Government School.

8. The principal improvements are required in rear of the town. A number of pools, which after heavy rains are formed into an almost continuous sheet of water, extend along and to right and left of the line of street leading through Robertson Petta; and instead of one drain to the Sultanagram swamp, there should be six or seven. The dotted lines in the plan shew the direction of those proposed, and any description will be unnecessary. As far as possible, I avoid crossing the lines which will be traversed by the masonry channel for drinking water.

9. Up to this time the expenditure which has been incurred in the drainages has been almost entirely confined to clearing out the existing channels, which were very much destroyed by the flood. The following is an approximate estimate of the proposed improvements.

Deepening Oakes Petta and Cantonment drainage channels to proper levels, at 1000 each.....	500	2,000
Deepening Edapilly drain to proper levels.....	900	1,600
3 New Culverts at 300.....	200	
Small drains 200.....	600	1,000
New Branch drain.....	300	
Culverts.....	100	
Small drains.....		
7 New drains from Government School Oakes Petta (to front swamp), and from N. I. lines, Robertson Petta, Godoogoo Petta, Rajoopetta and Varegoodem, aggregating 9600, at 10 Annas per running yard.....	6,000	
Small drains.....	1,000	
12 Culverts at 300.....	3,600	10,600
		15,200
		3,000

Compensation.....
(A more accurate Estimate of compensation will be made under the Collector's orders in the course of a few days.)

(Signed) J. C. ANDERSON, Lieut. Colonel, R. E.,
Superintending Engineer, 2nd Division.
MASULIPATAM, 12th December 1864.

POSTSCRIPT to Memoranda on projects for supply of drinking water and for drainage of Masulipatam.

I have alluded to a line of proposed canal from the Masulipatam canal to Munganapudi Salt Cotaur. The estimates for this work are ready, and, as soon as the plans are copied, will be submitted for sanction: and I have reason to believe that they will receive the support of the Collector and the Revenue Board, merely on the ground of the advantages the work will offer as a "communication." It has lately struck me, however, that an additional reason in favor of the project, is afforded by the facilities which it will give of warding off tidal inundation from the town and station. It will leave the Masulipatam canal about half a mile below the wooden Bridge at Chintagoontapollem, and from thence will run nearly parallel to the town, along the inner (or landward) margin of the front swamp, and the drainage water will be passed across it by means of Masonry sluices. The cutting at the lowest levels will yield an embankment 9 feet high above ordinary high water (6 feet wide at crest, and with side slopes of 2 horizontal to 1 vertical), which would be thrown on the seaward side, and would form an effectual barrier against floods 5 or 6 feet above ordinary high water.

2. The restoration of the sea dyke will also be very necessary, but it will be difficult to construct it so substantially as to inspire confidence in the minds of the residents of the town and station. It will have to be carried for a distance of between 2 and 3 miles along a plain which is very little above sea level, and which in fact has lately been submerged by the spring tides. It will be completely exposed to the action of storms, as there is not a bush or hillock on the seaward side to break the force of the winds or waves. Moreover loose sand, or here and there mud, is the only material available for the formation of a dyke, and during the high winds that prevail along the Coast in the hot months, much of this would be drifted away. After a time the dykes might be strengthened by means of plantations of Screw-pine and other shrubs; but probably two or three years would elapse before any advantage could be gained from them, and in the meantime if the dyke were breached, the consequences to the town might be serious. Hence the great benefit that I think will be derived by having an additional embankment, such as will be afforded by excavating the proposed canal to Munganapudi. That embankment would be turfed on both sides and would be easily maintained in really good order; while the sea dyke must always be more or less insecure. A similar argument, though not perhaps of equal force, may be advanced in favor of the drainage channel which it is proposed to carry from the head of the old Mungalairoo to the Tidal Creek. The plan which the proposed line traverses is open to inundation from both the sea and the river Kistna, and the Masulipatam canal embankments, which in many places are weak, form the only obstacle to the entry of the flood water into the front swamp, or, if it should rise high enough, into the Petta.

3. During the past rainy season the plain in question was inundated by Kistna water to the height of $2\frac{1}{2}$ above ordinary high tides, although the river had risen only 15 feet above the anicut; but freshes of 18 feet are not of very unusual occurrence, and of course the effect in producing inundation at Masulipatam would be proportionably increased. Indeed tradition would serve to shew that, previous to the late cyclone, Masulipatam has suffered more from the river floods

See accompanying Note.

than the sea, and at all events the above figures will suffice to prove that precautionary measures, are not unnecessary. The proposed drainage

channel would give the means of forming a strong embankment, while by its excluding salt water, it would also enable us to render the Masulipatam canal bank much stronger than it is at present, as it could be turfed, and rendered secure against erosion. As in the case of the sea face, there would then be a double barrier against inundation, and the town might be considered secure, unless from a cyclone similar to that which has lately devastated the place.

(Signed) J. C. ANDERSON, Lieut. Col., R. E.,
Superintending Engineer, 2nd Division.

MASULIPATAM, 19th December 1864.

APPENDIX E.

Dr. President of the Sanitary Commission in Account Current with the Collector of the Kistna District, from 20th November to 15th December 1864. Cr.

Receipts.	Amount.		Number of Vouchers.		Expenditure.										Total.		Remarks.	
	RS.	A. P.			Coolies.	Hire for Mammals.	Value of Baskets.	Cost of Superintendence.	Wages of Toties.	Cost of Bamboos.	Hire for Carts.	Sadewar.	Miscellaneous.	RS.	A. P.			
To amount drawn from Collector's Treasury...	10,177	7 0			1 By account rendered by Sabhapaty Naidoo for A and B Divisions of the Town...	2,539	94	44	313	69	32	935	54	16	4,096	0 0		
					2 Do. Nagabhushana Naidoo do. for the Fort...	1,956	91	11	189	1	...	58	...	1	2,307	0 0		
					3 Do. Varadarazooloo Naidoo do. for the C. Division of the Town...	248	10	...	57	...	...	53	...	13	381	0 0		
					4 Do. T. Dharmarow Moodolly Deputy Collector in the Town...	104	...	...	...	...	...	...	...	...	104	0 0		
					5 Do. Mr. Cresswell out side the Town...	180	...	...	...	...	15	...	...	38	233	0 0		
					6 Do. Major Applegath, for Survey of New Pettah...	29	...	...	...	...	...	...	...	15	44	0 0		
					7 Do. Major Tireman, for distribution of provisions and cloths...	162	...	...	...	...	...	...	...	...	162	0 0		
					8 Messrs. Ellis and Montgomery for Bearers...	...	...	...	...	...	...	...	...	95	95	0 0		
					9 Do. Captain Frazer for extra Police employed with gangs and at relief houses...	...	...	...	...	...	...	...	...	...	...	...		
					10 Do. Syed Abdul Raheem for D. Division of the Town...	...	...	...	...	...	...	...	...	...	172	0 0		
					11 Do. Captain Maiden for Fort and Boats unloading Steamer Arabia. Balance on hand with Mr. Brandt..	...	...	...	...	...	...	...	...	...	878	0 0		
						...	...	...	...	...	...	...	...	...	...	92	0 0	
						...	...	...	...	...	...	...	...	...	1,613	7 0		
						6,188	195	55	559	70	47	1,016	54	350	10,177	7 0		

* Note.

Mr. Brandt, the Special Assistant to the Collector, has been placed in charge of the Sanitary and Conservancy Establishments, and has been furnished with Rupees 1613, which is the estimated expenditure until the 31st December 1864.

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(Signed) R. S. ELLIS,
President of the Sanitary Commission.

No. 167. From the Honorable R. S. ELLIS, Esq., C. B., President of the Sanitary Commission, Madras, to the Honorable A. J. ARBUTHNOT, Esq., Chief Secretary to Government, Madras; dated 6th January 1865, No. 420A.

In continuation of my report, dated the 17th December 1864, respecting the condition of the Town and Station of Masulipatam, after the disastrous storm of the 1st November last, I have the honor to submit such information as seems necessary to enable the Government to determine upon the amount and nature of the assistance required, to enable the inhabitants of the villages which were inundated to resume the cultivation of their land. This information is the result of inquiries made by Mr. Thornhill, the Collector of the Kistna District, and it is in accordance with his opinion that the following recommendations are made. Mr. Thornhill is very anxious that the intentions of Government, in respect of the assistance to be afforded to the inhabitants of that portion of the District which has suffered most severely by the storm of the 1st November last, should be made known, both as an encouragement to the people themselves, and as affording him guidance in the preparation of the necessary detailed accounts which will be required.

2. I also beg to submit certain suggestions regarding the compensation, which it may perhaps be considered advisable to grant to the servants of Government, who have suffered most severely by the storm.

3. It will be seen by my report that it is computed that no less than seven hundred and eighty square miles of country have been more or less affected by the disastrous inroad of the sea. Besides the great loss of life that ensued, the crops, wherever the sea-water reached, have been destroyed, and in most cases the surviving ryots have lost all their cattle and seed grain. It remains, therefore, to be considered what remissions will be necessary for the current year, and what advances should be made to enable the ryots to resume cultivation. The inundated tract of country is composed of land forming the whole or part of Zemindaree estates, and of land held on Joint tenure or Ryotwaree tenure.

4. The Zemindaree estates that have suffered by the storm are Sallapillay, Wulloor, and Crootoo Yenoo.

5. The house of the Sallapillay Rajah, Yallagada Unkened Bahadoor, which was a very handsome building, has been much damaged by the storm, and the Rajah has sustained very heavy losses in cattle. Of sixty-six villages included in this estate, forty have been inundated, and ten of these villages have been entirely destroyed. The Peshkush paid by this Zemindar is 88,000 Rupees per annum.

It will be impossible for him to collect any rent from the villages which have suffered from the storm; nor can cultivation be resumed in these villages unless advances are made to the ryots, to enable them to purchase cattle and seed grain.

Under these circumstances, it will be necessary that a remission of Peshkush for the present year should be made to the Zemindar, in proportion to the number and rental of villages which have been inundated. This will be about three-fourths of the total Peshkush, or Rupees 66,000.

This remission of Peshkush will, of course, be made on the condition that no collection of revenue is made by the Zemindar from the ryots of the villages on which the Peshkush has been remitted.

The Zemindar has been himself so great a loser by the storm of the 1st November that he is not in a position to make any advances to the ryots, to enable them to resume their cultivation. I would, therefore, recommend that a sum of 30,000 Rupees, re-payable in yearly instalments of 10,000 Rupees, be advanced to the Sallapillay Zemindar. This will enable him to make the required advances to his tenants. Without the remission and assistance I have suggested above, there will be a very serious diminution of the cultivated area of this estate, and it will be impossible for the Zemindar, who is not a wealthy man, to pay with regularity the present rate of Peshkush.

6. The portion of the Wulloor Rajah's estate, which has suffered by the late storm and invasion of the sea, is Godoor Pergunnah, of which about thirty villages have been inundated.

Wulloor Zemindaree.

The Peshkush on these villages will amount to Rupees 33,000. I believe that a fair remission to the Wulloor Rajah, on account of his losses by the storm, will be 22,000 Rupees, or two-thirds of the Peshkush, subject to the condition of his making a proportionate remission to his ryots. The Wulloor Rajah also holds the Abkarry contract for the whole of the Kistna District. He will lose very heavily by the storm, both by the great destruction that has taken place in the Palmyra trees, and by the great loss of life in the Town of Masulipatam and in the neighbouring villages.

The reduced number of inhabitants and their poverty will seriously influence the consumption of liquor. Under these circumstances, I think it reasonable that his contract payment for the year, which amounts to 1,46,000 Rupees, should be reduced by one-fourth, or Rupees 36,500. This would seem the more necessary, from the circumstance that the Abkarry rent for the present year is higher than that of any previous year by Rupees 50,000.

As the Wulloor Rajah is a man of considerable property, he will be able, without assistance from the Government, to make the advances to his tenants, which are necessary to enable them to resume their cultivation.

7. This is an estate situated on the line of Coast to the north of Masulipatam, and has suffered most severely by the storm. The Zemindaree consists of nine

Crootoo Venoo Zemindaree.

villages, paying a Peshkush of 3000 Rupees per annum. Of these, six have been inundated by the sea-water, and will not be able to pay any rent to the Zemindar for the current year. Under these circumstances, a remission of two-thirds of the Peshkush, or Rupees 2000, seems necessary.

An advance of Rupees 5000, re-payable by instalments extending over three years, will enable the Zemindar to make the necessary advances to his tenants.

8. Besides these Zemindaree estates, there are six small villages under a perpetual settlement. The total Peshkush paid by these villages is 3000 Rupees per annum. Of this, it will be necessary to remit two-thirds, or 2000 Rupees, in consequence of the severe loss which they have suffered by the storm, and to make advances of Rupees 1000, re-payable by instalments extending over three years.

As regards the villages in the Repalli and Bunder Taluqs held on the joint rent and Ryotwarce tenure, and which have suffered severely from the effects of the storm, it may be roughly stated that they are eighty in number, with their adjacent hamlets.

These villages represent an annual revenue to Government of Rupees 2,00,000.

In these villages the standing crops have been almost entirely destroyed, and there have been enormous losses of cattle, seed grain, and other property.

It will probably be necessary to grant in these villages remissions amounting to Rupees 1,50,000, and to make advances, re-payable in three years, of Rupees 70,000. The total of the remissions and advances as detailed above are—

Remissions..... Rupees 2,78,500

Advances..... „ 1,06,000

9. There are also in the inundated tract of country a considerable number of Inam grants, under which the grantees pay a fixed quit-rent.

These persons have lost all their property, and it will be desirable that the Collector should be permitted to make to them such a remission of quit-rent as may appear, on inquiry, to be necessary.

10. In what I have written above, I have only been able to give to the Government a rough estimate of the expenditure required in this emergency, and to afford information such as may enable the Government to give Mr. Thornhill general instructions as to the course to be followed in making remissions and giving advances.

11. Mr. Thornhill proposes shortly to visit all the villages which have suffered from the storm, and he will be able, from his great knowledge of the Kistna District, and after personal inspection, to secure an exact apportionment of any assistance which it may please the Government to grant.

I have myself visited a sufficient number of the villages in the inundated tract of country to enable me to assure the Government of the serious nature of the disaster, and of the urgent necessity of liberality on the part of the State.

12. In the proposals I have made, I have only aimed at obtaining a temporary and partial alleviation of the extraordinary sufferings which have been endured by the people of the District, and I have not contemplated any thing approaching to compensation for the losses they have actually suffered.

13. I would also beg to submit, for the favourable consideration of Government, the case of Nazim-oo-Dowlah Rustum Rajah, the representative of the family of the former Nawabs of Masulipatam. This gentleman draws a pension of 1000 Rupees per mensem, for the support of himself and his immediate relations. Other branches of this family draw minor pensions, amounting in the aggregate to Rupees 3041 per mensem. The house of Nazim-oo-Dowlah has been much injured by the storm of the 1st November last, and all the houses of the family have more or less suffered, some having been entirely destroyed. Their losses in clothes and jewels have also been very great. An advance of Rupees 5000, to be re-paid by yearly instalments of 1,000 Rupees, would be esteemed a very great benefit, and would afford most timely assistance to a family of high rank, who are not in affluent circumstances. Of this amount, 2000 Rupees should be allotted to Nazim-oo-Dowlah, and Rupees 3000 to the other members of the family, according to their respective rank and necessities.

14. The Divi Zemindar, Jagganadha Row Gopal Row, draws a pension of 400 Rupees per mensem; his house, which is a very handsome building, and is an evidence of the prosperity of the family before their estate was resumed, has been much damaged by the storm. An advance of Rupees 2000, re-payable by yearly

25th January 1865.

instalments of 500 Rupees, would greatly assist this gentleman in repairing his house. I may mention that after the storm this house was most kindly given up, by the orders of Jagganadha Row, as a place of refuge for the houseless poor of Masulipatam, and that it is still used as one of the Relief Houses for the distribution of food for the poor of the town.

15. Another subject of inquiry, to which I directed my best attention while at Masulipatam, was the extent of loss suffered by the servants of Government, Covenanted and Uncovenanted, by the storm of the 1st November. I did this in the hope that under the special and exceptional circumstances of the case, it might please the Government to give some assistance towards repairing such of their losses, as must immediately be made good by these officials, in order that they may perform their duties in the ordinary manner. Of the Covenanted officials, those whose names are noted marginally have all lost much property.

16. I have ventured to suggest in the margin, opposite to their names, the amount of compensation which will, I believe, be a very moderate compensation to each of these gentlemen for the loss of tents, horses, and the most necessary part of their furniture. Captain Fraser has, perhaps, been in proportion to his means the heaviest sufferer, having

Mr. Thornhill, Collector.....	Rs. 2,000
Mr. Horsley, Sub-Collector.....	700
Mr. Brandt, Assistant Collector.....	500
Colonel Anderson, Royal Engineers.....	2,000
Captain Hasted, Royal Engineers.....	700
Captain Fraser, Superintendent of Police.....	2,000
Major Applegath, Staff, in charge of Pensioners.....	1,967
Total.....	9,867

lost three horses, the whole of his camp equipage, books, clothes, and furniture. I may observe that the amount recommended in each of these cases is in no instance in excess of what would be awarded to Regimental Officers under the rules in force for their indemnification for losses by shipwreck, or casualties on board-ship, occasioned by storms or stress of weather.

17. I beg also to bring to notice the losses sustained by the Uncovenanted officials marginally noted, and the amount of compensation, which, I think, may reasonably be granted.

Mr. Wilkins, Judge of the Court of Small Causes.....	Rs. 400
Mr. Majoribanks, Deputy Collector in charge of Salt Department.....	800
Mr. Tims, Tahsildar of Masulipatam.....	400
Total.....	1,600

Mr. Wilkins has lost his carriage and horse, and his house has been much injured.

Mr. Majoribanks has lost his Salt Bungalows, three in number, which must be re-built or re-placed by tents.

Mr. Tims has lost the whole of his property, and the compensation I have recommended for him will not do more than re-place his tents and horse, which are required to make the Tahsildar, an East Indian, efficient.

18. The Police Force stationed in Masulipatam have been very great sufferers by the storm of the 1st November. They have, without any exaggeration, lost every thing they possessed. The Office establishments noted marginally have all suffered most severely. In many cases the houses of these public servants have

Revenue and Magisterial Office and Public Works Department.
Police.
Post Office.
Telegraph.
Small Cause and Moonsiff's Court.
Commissariat.
Ecclasiastical.
Medical.

been entirely destroyed, and all have lost a great part of their clothes, and their

other personal property. This is a very serious misfortune to these men, who are certainly not over-paid at the present high prices.

19. Under these circumstances, I venture to recommend to Government the grant of a gratuity, equivalent to one month's salary, to the Police and all the subordinate Public servants at Masulipatam, who have suffered by the disastrous storm of the 1st November 1864. On a rough estimate, I calculate that these gratuities will amount to Rupees 11,989, and the total amount of compensation recommended above to the Government servants, Covenanted and Uncovenanted, will then amount to Rupees 23,456.

18. The total disbursement recommended is as follows :—		RS.
Remissions.....	2,78,500	
Advances, vide paragraphs 5, 6, 7.....	1,06,000	
Compensation to Government servants, Covenanted and Uncovenanted, &c.....	23,456	
Total...	4,07,956	
To be recovered from advances...	1,06,000	
Net Total...	3,01,956	

20. The circumstances of the calamity at Masulipatam, which has affected all classes of the community, are so exceptional—the liberality of the Government will be so well bestowed—and it is so unlikely that the expenditure it will entail will ever serve as a precedent—that I trust that the recommendations which I have made will receive the favorable consideration of the Government.

No. 168. ORDER THEREON, 25th January 1865, No. 111.

In the first of the letters above recorded, the President of the Sanitary Commission has submitted his report on the condition of the Town of Masulipatam and the adjoining District after the late cyclone, and on the measures taken for the prevention of sickness. In his second letter, Mr. Ellis furnishes information as to the amount and nature of the assistance which, in his opinion, and in that of the Collector, is requisite to enable the inhabitants of the villages which suffered from the inundation to resume the cultivation of their land. He also submits suggestions regarding the question of compensation to the servants of Government, all of whom have suffered severe losses from the storm.

2. Mr. Ellis' report shows that the destruction of life and property was by no means overstated in the report made by the Collector, shortly after the inundation occurred. It appears that the sea rose between 12 and 13 feet above the level of ordinary high water. The inundation extended along about 80 miles of Coast, and, on an average, about nine miles inland. In one direction, it reached a place seventeen miles inland; and not less than 780 square miles of country were, more or less, affected by it. Mr. Ellis estimates the loss of life in the Town and Fort at 15,000 persons, or little short of one-third of the entire population. In one Brahmin village, in the outskirts of the town, out of a population of nearly 700, only 70 persons survived. In the Fort and Town, all the houses which were not built on sub-

stantial basements, came to the ground. In the Lines of the Native Regiment, the Sepoys' huts were entirely destroyed; and in the European quarter of the town, all the godowns, out-houses, and stables fell. The European houses stood; but the greater part of the property contained in them was destroyed. The destruction of life and property in the neighbouring villages was equally great. The crops are all ruined, and the whole of the cattle lost. The ground is covered, for miles, by a thick coating of saline mud. In 27 villages which Mr. Ellis visited, out of a population numbering 10,320, only 4893 survived. Particulars of the total loss of life, throughout the District have not yet been obtained, but are to be submitted shortly.

3. Mr. Ellis describes the several measures taken by him for the prevention of sickness. They consisted of:—1st, clearing the roads of fallen timber and the ruins of houses; 2nd, the drainage of the sea water, and, in certain places, the removal of the deep mud deposited on the roads; 3rd, the burial and burning of corpses and of the carcasses of animals; 4th, the erection of public latrines; 5th, the thorough cleansing of the streets, morning and evening; 6th, the careful re-covering of the graves of those who were hurriedly buried immediately after the storm; 7th, the destruction of the dogs and pigs in the town, which, since the storm, had been feeding on corpses and carrion.

4. The expenditure incurred in carrying out this work, amounting to Rupees 10,177-7-0, is sanctioned. The work, Mr. Ellis states, has been thoroughly executed. The roads and streets have been cleared of all the debris of the storm; the salt water has been drained off; the Town and Fort are now cleaner than they have ever been; and the expenditure which has been incurred, has afforded employment to a large number of the poorer inhabitants who must otherwise have been supported by charity. The re-building of the town, has commenced; and the inhabitants of those pottahs which have principally suffered, have been induced to move to higher ground. Every thing appears to have been done that could be done, by the distribution of food, clothes, and money, partly from the funds granted by Government for the purpose, and partly from the Relief Fund, for the relief of such of the poorer classes as were unable to find employment, both in Masulipatam and in the neighbouring villages.

5. Mr. Ellis submits two projects prepared by the Superintending Engineer for supplying the town with water, and for improving its drainage. The prosecution of the first of these works as an emergent work has been already sanctioned, and, it appears, is nearly completed, at an estimated cost of Rupees 45,338. The details of this, and of the drainage project, which, it is observed, includes the construction of an embankment to be formed by the earth raised in excavating one of the proposed canals, will be considered in the Public Works Department. In this place, the Governor in Council needs only observe that it has been determined to retain Masulipatam as the principal Civil station of the District, and that, therefore, both these projects are of great importance as regards the future health of the station.

6. The Governor in Council sanctions the Conservancy Establishment proposed by Mr. Ellis, at a monthly cost of Rupees 963, to be continued for twelve months, at the end of which time, the charge must be met by a Municipal rate.

7. The Governor in Council notices, with much pleasure, the high terms in which Mr. Ellis writes of the conduct of the Collector, Mr. Thornhill, and of the other Officers, European and Native, whose names are entered in the margin. The Government had formed, from the reports submitted by Mr. Thornhill immediately after the storm took place, a very favorable impression of the energy and judgment displayed by him on the occasion; and it is satisfactory to find that impression so fully corroborated by Mr. Ellis' report. Mr. Thornhill's services will be brought to the special notice of the Secretary of State.

8. His Excellency in Council has much satisfaction in sanctioning the grant of a gold bangle, at a cost of Rupees 100, to M. Sabapati Naidoo, as a mark of the approval of Government of the valuable services rendered by him. The rewards proposed to be given to each of the Town Moonsiffs are also sanctioned.

9. The Governor in Council sanctions the advances recommended in the cases of Nazim-ood-Dowlah Rustum Rajah and to Jagganadha Row Gopal Row, to be recovered by annual deductions from their pensions. The remissions and advances which Mr. Ellis recommends to be given to the Zemindars and Ryots who have suffered from the cyclone, will be considered in the Revenue Department.

10. Mr. Ellis suggests that the Police and other subordinate public servants who have suffered from the storm, should be granted gratuities equivalent to one month's salary. He also recommends certain specific grants, in the case of the superior Officers in the Revenue, Judicial, Public Works, and Pension Departments; these grants being calculated with reference to the losses which the several officers have sustained. The entire amount of compensation proposed is estimated at Rupees 23,456. The Governor in Council resolves to adopt Mr. Ellis' recommendations. The case is an exceptional one, by no means likely to serve as a precedent; and the amount of compensation proposed is not excessive, compared with the losses which these Public servants have sustained.

11. The Governor in Council desires, in conclusion, to convey to Mr. Ellis the thanks of Government for the efficient manner in which he has discharged the duty entrusted to him.

(True Extract).

G. J. Constant
Chief Secretary.

To the President of the Sanitary Commission.

„ Public Works Department.

„ Revenue do.

„ Judicial do.

„ Collector of the Kistna District.

„ Military Department.

„ Civil Paymaster.

„ Deputy Auditor and Accountant General.

Report Aug 9th
May 1859 to 6th Aug 1859

From the office Secretary
June 11th 1859 / 15th March 1860
L. N. 816

20/19 x 25.

Rev^d 1865. Prof^r
No of 5045 from 1859
Proceedings of the
Practical Court in
the Public Office

Dated 25th 3rd day
Received 30th 3rd 1865.

82-111.

stating that the
recommendation of the
Honorable Mr. Allen is
regarding the grant of a
mission and advance
to the Lancaster State
of Massachusetts will be
considered in the Revue

defile

Received 12th 1859 1859
118 of 1859 1859 1859 1859
1859 1859 1859 1859 1859

With enclosures

18-1865
Commissioner to the Collector of
the District for early report
through the Board of Revenue on the re-
-visions and advances referred to in par-
9.—

The Board will be good
enough to give the matter their own
earliest consideration on receipt of
Mr. Hornhill's proposals.

From Mr. George
10th July 1865

to the Board of Revenue

The following is the result of the
Commissioner's report on the 12th 1865

22/11