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Mr. Mehta observed that he had taken Mr. Snow's calculation, but if the cost were thirty or forty lakhs it only strengthened his argument. But fifteen lakhs even was a very large outlay to be incurred, unless for a necessary purpose. He knew that by manipulating the water charges they could get a return that would more than twice cover this initial outlay, but they would not be justified in taking this money from the ratepayers unless there was absolute necessity. (Hear, hear). It was contended that while forty gallons per head reached the houses, twenty gallons per head was wasted. If that was so, it was a serious state of things and something should be done to remedy it. But that conclusion had been very closely contested. The Water Committee asked the Water Engineer to take measures to test where the waste actually occurred. He told them that the wastage from the mains was only very small, about four per cent., but then it came out that the examination he had made was of the most incomplete and perfunctory character. Up to the present they had not the means of really coming to a judgment as to the actual leakage from the mains. From a return prepared in regard to London and other English cities and towns it appeared the use of Deacon's meters showed that water mains were certainly responsible for a great amount of leakage. This was one of the points on which the Corporation should have been supplied with definite information from the experts, but they were told that some stop cocks could not be found and others were in such a state that they could not be shut. It was the duty of the Water Department to see that such taps were in proper order. When it was stated that the habits of the people were responsible for waste, the Committee asked for a return of the consumption per head in each section of the different wards. That table showed that in Mandvie the consumption was only 24 gallons per head, in Dhongri 22, Girgaum 24, Mazagon 21, First Nagpada 21, Mahim 21, Dhobi Talao 26 and in other congested districts 23 gallons per head. It occurred to the Committee that if it was the practice of the natives to be wasteful in the use of water, it would be apparent in these thickly populated parts of the city. But no explanation could be given of the facts shown by the figures. The other side of the picture was that consumption was larger where the population was smaller. In the Esplanade it was 73 gallons per head, and in Chaopatty 65. He had not the slightest doubt that in the houses with gardens in Walkeshwar, Mahalakshmi and Chaopati there was enormous wastage. He knew it from his own experience; and the Committee were right in suggesting that every house in the city with a garden should be metered. It was in the hope of settling the facts regarding wastage, that they recommended the adoption of meters in certain parts of the town, as an experiment and in the hope that it would show that there was no need for

their general introduction. Reading through the whole literature on the subject it was impressed upon him that they should find out the real leakage in the mains and lakes and ascertain the consumption in other directions outside the houses. It would be wise to have a special officer to apply himself to the testing of the mains by Deacon's meters as the Water Engineer was taken up with one view. He further suggested that the work of this special officer should be watched by a small Committee of the Corporation. Mr. Santo Crimp had pointed out that they must have Tansa water poured into the reservoirs ; and whatever expense was necessary for bringing that water into Malabar Hill and Bhandarwada reservoirs it should, in his (the speaker's) opinion, be undertaken at once. He did not want to go into any personal questions, but he blamed Mr. Bruce in one respect. He quite admitted that Mr. Bruce was entitled to the opinion he formed in regard to waste and that it could be limited only by the introduction of meters. But when he saw that there was a Committee of the Corporation who hesitated and thought that other means might remedy the difficulty he was bound to do as much as lay in his power to try and remove the cause of the complaints which were raised. There had been great complaints of the unequal distribution of water through the supply not being constant and at full pressure. They had repeatedly pointed out to him that they had given him an Inspection Staff, which he must employ for the purpose of finding and checking waste. He had not the slightest hesitation in saying that that duty had been thoroughly neglected by the Water Department. It might be said that there would have been a cry that the people were being harassed and oppressed, but still the work had to be done. There were other departments of the Municipality, whose work was complained against, but it was not stopped on that account. The reason why it was not done was because the Water Engineer did not believe in it. The head of the Water Department was bound to employ the men placed at his disposal for the purpose of checking waste. The Water Department required a great deal of tact in dealing with the people and from the correspondence that appeared at the Committee it appeared that Mr. Bruce had failed to see that in dealing with complaints he should show tact and sympathy. In reference to Mr. Bruce's letter to the Commissioner which was submitted to the Corporation, Mr. Mehta said that hitherto they had been proud and the Executive had been proud that they and their subordinate officers had acted loyally with each other. He was therefore very sorry to see such a letter as that which Mr. Bruce placed before the Corporation. Mr. Harvey was absent and Mr. Bruce said things which certainly could not but reflect upon his immediate chief. Mr. Bruce did not realise his position in the scale of the Municipal service. He seemed to think that he must have the fullest command of his



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subordinates. He (Mr. Mehta) asked members and Government officials there, whether a subordinate officer, while perfectly free in his own area was not bound to carry on his department in submission to his superiors? He sincerely said that when he read this letter he was sorrier for Mr. Bruce than for anybody else. It was with great regret that he made these remarks. On the Municipal service depended the welfare of the City and he asked the Corporation to draw the attention of the Commissioner to these matters in order that he might see that it is time the Department should be placed upon a footing, in which such things cannot occur. He moved the following proposals:—

“ That the Report of the Committee appointed by Corporation Resolution, dated the 22nd April, 1901, on questions relating to the water-supply of Bombay be recorded.

“ That, before proceeding to decide that the experimental measures recommended by the Committee be taken in hand, the Corporation think it desirable that a Municipal officer, specially chosen by the Municipal Commissioner in consultation with the Executive Engineer, be deputed to ascertain, by all possible means, the quantity of water, actually brought into the city; and also to ascertain, by application of Deacon's meters and all other available means, the amount of waste occurring through leakage from the mains and reservoirs, and the amount of consumption or waste of water of all sorts which takes place except such as takes place after reaching house-pipes. The Special Officer should report to the Commissioner, through the Executive Engineer, the results arrived at by him, and the Commissioner should be requested to submit the report with his own remarks to the Corporation.

“ That the Commissioner be requested to instruct the Special Officer to work in consultation with a committee composed of Major C. B. Mayne, R. E., Khan Bahadur Darasha Ratanji Chichgur, Mr. Alex. Mackenzie, Dr. Ismail Jan Mahomed, the Hon. Mr. Ibrahim Rahimtulla, the Hon. Sir Bhalchandra Krishna and Mr. Hormasjee Shapoorjee who should be requested to carefully observe his work and report thereon to the Corporation.

“ That the Corporation desire that the works named below which are necessary for carrying Tansa-water direct to the Malabar Hill and Bhandarwada Reservoirs should be taken up and prosecuted as quickly as possible, the cost being met as recommended in Standing Committee's Resolutions, dated the 4th October 1899, and 8th November, 1899.

Main along Kala Chowkey Road from Parel Road to Ghorupdeo and along Reay Road to Bhandarwada Reservoir of 18-inches diameter except for 600 feet for which 24-inches cast iron pipes in stock are to be used. The 18-inches to be cast iron for half the distance and steel for the other half. The main to have

	Rs.
an emergency connection with the 48-inches Bhandarwada outlet ... ..	1,40,200
9-inches service main connected at one end with Bhandarwada Reservoir and at the other with the Sewree Road 12-inches main and supplemented by a 9-inches main in Connaught Road connected with the 16-inches main in Parel Road ... ..	51,150
22-inches steel main from the 48-inches Tansa main at Chinchpokli to Grant Road, there connecting with existing 27-inches and continued to Malabar Hill with 32-inches steel main ...	2,07,300
32-inches steel outlet main, Malabar Hill to Chowpati ... ..	32,150
15-inch main from 24-inch. Vehar main at Parel Bhoiwada to Parbadevi Road, and 9-inch thence to Century Mill at a cost of ... ..	55,750 <sup>a</sup>
	<hr/> 76,580 <sup>b</sup>
10-inch and 9-inch main in Grant Road to enable Kamatipoora to be supplied from Bhandarwada at a cost of ... ..	14,100
9-inch main in Tardeo Road from Forjett Road to Falkland Road, for the supply to mills in the vicinity at a cost of ... ..	9,300
Total ...	<hr/> 5,09,950 or 5,30,780
<sup>a</sup> If of steel.	<sup>b</sup> If of cast iron,

"That the Commissioner be requested to submit at an early date the plans and estimates for additional filtering accommodation promised in his letter, dated the 14th June 1901, together with proposals for meeting the cost of the additional filter beds.

"That the Commissioner's letter, dated the 19th June 1901, and 10th July 1901, be recorded, and the Commissioner be informed that the Corporation are of opinion that the distribution of water in the city is of a character to justify in a great measure the loud and recurring complaints which are made by the rate-payers, and that, if the existing Water Department is unable to devise measures to remove these complaints, the Commissioner should proceed to take steps to reform and reorganize it.

Sir Bhalchandra Krishna seconded the motion and it being then 5-15, p. m. the discussion was adjourned till 29th July 1901.

The Corporation resumed on 29th July 1901 the consideration of the water question in reference to which the Hon. Mr. Mehta moved a comprehensive resolution at the last meeting.

Mr. Hormusjee Shapurjee proceeded to reply to Mr. Mehta's remarks in reference to the recent ratepayers' meeting which passed resolutions on the meter question. He observed that the meeting was a very influential one and represented the aristoc-

racy of intellect and wealth in Bombay. It was urged that ratepayers' representatives on the Corporation, who did not represent the views of their constituents on this question should go before the electors. They had, he said, to go against the strongly expressed wishes of their constituents. Councillors were invited to attend that meeting by a notice which appeared in all the papers.

Mr. Hormusjee proceeding said that Mr. Mehta stated that the introduction of meters was not intended to increase revenue. He was afraid Mr. Mehta was speaking without the book. By this year's budget it was apparent that though they were receiving ninety lakhs of rupees, the Executive Officers desired that the revenue should be increased by Rs. 1,75,000. The Standing Committee reduced that amount to a considerable extent. The estimated income from water taxation was Rs. 19,06,000. Of that amount they got seven lakhs from ratable valuation and the balance from meter measurements. There were about 2,500 premises metered out of 37,000. The amount received from the 34,000 premises that were not metered was only seven lakhs as against about twelve lakhs from meters. It was evident that there was a desire to get more revenue by meters. Mr. Mehta said that the Corporation had no power to make a profit out of the water supply. But if they knew that now, neither Mr. Mehta nor his friends the President and Mr. Ibrahim Rahimtula knew it in January last when he (Mr. Hormusjee) brought the matter forward.

The Hon. Mr. Ibrahim Rahimtula said Mr. Hormusjee's statement was entirely opposed to facts.

Mr. Hormusjee: Mr. Ibrahim said there were no negative words in the Act.

Mr. Ibrahim: The facts are incorrect again and I am ready to furnish an explanation of what I said.

The President: Mr. Ibrahim has contradicted the statement and I think Mr. Hormusjee it is the rule when a member offers a contradiction to accept it.

Mr. Hormusjee said he accepted the contradiction but referred to a rider moved by Mr. Ibrahim that counsel's opinion be taken in the matter. Counsel agreed with the view which was expressed on his (the speaker's) behalf that the water rates be reduced. On the last occasion Mr. Mehta said it was only during the last year that they had been getting a profit but they had been actually getting profits from the water consumption for the last four years. In the present year the estimated revenue is nineteen lakhs against Rs. 16,40,000 expenditure. He contended that the introduction of meters for bungalows and gardens as an experiment had been a total failure. Before the year was old he brought this matter to the notice of Mr. Harvey and pointed out that the result of

the meters in bungalows and gardens was that he thought revenue had been increased, a number of gardens had been destroyed, and people had dug up their wells. As a consequence there were cases of plague in bungalows where there had been none before. There was a tremendous outcry as to the irregularity of meters. Mr. Mehta said he had had experience of that kind and he was able to remedy the matter. He was a gentleman of fortune and was very fortunate in getting the assistance of the Municipal officers as soon as it was needed (laughter).

Mr. Mehta: I never had the assistance of any Municipal officer.

In reply to a further remark by Mr. Hormusjee, Mr. Mehta said his meter was perfect and he had pointed out that in his case the waste of water was due to the negligence of his servants.

Mr. Hormusjee proceeding to deal with the question of waste said that the Municipal officers stated that 58 million gallons of water left the lakes.

The water that entered the town at Chinchpoogly and Ghat Cooper was stated to be 35 million gallons. But he calculated that only 31 million gallons entered the town. At any rate, between the lakes and Ghat Cooper and Chinchpoogly there was a loss of from thirty to forty per cent. The domestic supply was about 21 million gallons which gave them about 25 or 26 gallons per head. Was that an excessive quantity? One of their executive officers said that thirteen gallons per head ought to be enough though one of the Divisional Health Officers stated that the Health Department estimated 45 gallons for each milch cow. When the supply was nineteen gallons per head, Sir Charles Ollivant thought it insufficient and persuaded the Corporation to incur the additional expenditure of a crore and a half to increase the supply. In London, the supply was from forty to forty-five gallons per head and in Glasgow it was fifty gallons. There was no doubt a very large waste of water but even if some of it was due, as was alleged, to the people leaving taps open the distribution of water at unholy hours was responsible for that. It was said that there were meters in Berlin, but they had set their faces against German things. Compared with Calcutta, Bombay had fifty per cent. more taxation and they were to be told they should not have more than one-third the water Calcutta got. Mr. Hormusjee proceeded to quote from scientific authorities on water supply and meters as given by Khan Bahadur Darashah Chichgar in the "Akbari, Saudagur" and was still speaking when the clock struck four having already occupied only a few minutes short of an hour.

Mr. Shroff rose to a point of order. Mr. Hormusjee he said had been quoting authorities which had been circulated among the members and it was a thorough waste of time and mem-



bers patience was about exhausted. If Mr. Hormusjee would throw some fresh light on the subject it would receive attention.

The President appealed to Mr. Hormusjee to bear in mind the time and the patience of his audience and to stick to the point as far as possible.

Mr. Hormusjee continuing said another point was whether under the Act it was competent to meter the town so as to derive revenue thereby. He drew attention to section 140 under which they were allowed to raise revenue and the primary way which it was to be derived was by ratable valuation. By section 169, power was given to the Commissioner in certain cases to raise revenue by means of meters with the consent of the Standing Committee. At present they got 50 per cent. by way of meters. They delegated the power of the Corporation to the discretion of the Commissioner, but if they left it there the sixty per cent. would be increased. Did the Legislature contemplate that the Corporation should give up the power of raising money and should go to the Commissioner for the purpose of raising the water tax? He contended that the people were not now getting a sufficient supply of water and if meters were introduced the people would not use enough for sanitary purposes. He proposed as an amendment to Mr. Mehta's motion "that the Commissioner be requested to prepare and submit to the Corporation at his early convenience a scheme for an efficient staff for the systematic and periodical survey of the mains and pipes so as to detect and remedy leakage and stop the waste of water." He thanked Mr. Mehta and Sir Bhalchandra for the relief given to the ratepayers by the postponement of the meter experiment. But in regard to the special officer whom it was proposed to appoint to test the mains, so long as human nature was human nature the inclination of that officer would be to support the opinions of his superior officers ("No. No.") He would be glad if he were undeceived on this point. The service pipes should be examined as well as the mains to avoid any mere inferences should no wastage be discovered in connection with the mains.

Mr. Jagmohandas Vurjeevandas seconded the amendment.

Dr. Sukhia in the course of lengthy remarks took exception to the names of the Committee proposed by Mr. Mehta. He proposed that Mr. K. N. Wadia, Dr. Dinsha Master and though not presumptuous his humble self (much laughter) be substituted on the committee in place of others.

Mr. Wadia said he preferred not to serve on the Committee.

Dr. Master also asked to be excused.

Mr. Mehta: Perhaps Dr. Sukhia will now ask to be excused (laughter).

Dr. Sukhia, no as a matter of public duty I would be prepared to spend days to get at the truth of this matter (laughter). Proceeding he dilated on the possible effects of the introduction

of meters and the danger that the people would use less than would suffice for sanitary purposes.

There were other possible evils besides danger to health and uncleanness. If he said, you charge for water people will think it will be much better to go for alcoholic drink (laughter) and there will be degradation.

Dr. Sukhia was still speaking when the clock struck five. A number of member then left their seats but as there was still a quorum Dr. Sukhia continued as before.

Mr. Kazi Kabirudin said that as the Council usually sat from three to five o'clock an adjournment should now be made.

The President said the rule was that if a member was speaking they could not adjourn whether it was five or six o'clock until he had finished. Subsequently the President again appealed to Dr. Sukhia to shorten his remarks.

Dr. Sukhia, however, continued until 5-15. When he sat down.

The Corporation then adjourned till Thursday.

The Corporation, proceeded to resume the discussion on the water question.

The President said that in resuming the debate, he would appeal to members to try and economise public time as far as possible. (Hear, hear).

Dr. Cowasjee:—This is the sixth time you have said that.

The President: I have said it a sixth time and I hope I shall not be under the undesirable necessity of saying it a seventh time. It is only necessary to say that I hope members will remember it is perfectly useless to travel over ground traversed by previous speakers. If only members will bring forward fresh arguments, that may be of use to the Corporation, it will be well.

Mr. Dhondy in resuming the debate on the water question contended that there was leakage of the mains. Regarding the Committee which Mr. Mehta had proposed, he suggested that two or three other members should be added, as he had talked with several members already on the Committee and he was sorry to say they were in favour of meters (laughter). He suggested that Dr. Dadachanji, Mr. Kazi Kabiruddin and Mr. Manmohandas should be added to the Committee. Referring to Mr. Bruce's letter to the Corporation, he said he found that Mr. Bruce was not on good terms with the European officers and if a man was not on good terms with his own, he must have some drawback. The fact that he came to the Corporation without consulting his superiors showed that he must be a very head-strong man and it must be a job for his superiors to work with him. In 1898, he (Mr. Dhondy) found that there was leakage at Bhandarwada Reservoir. He asked Mr.

MacDonald to go and see it with him, but he suggested that he should speak to Mr. Bruce. He (the speaker) drew the attention of Mr. Bruce to the matter and waited for several months for a reply and had to send him a reminder.

Mr. MacDonald : Mr. Dhondy was at Deolali during those months.

Mr. Dhondy : That is so. But if there was a leakage representing a loss of Rs. 75,000, it was his business to take steps to prevent it. I was a Councillor and if to a man like me (laughter)—he did not give an answer, what answer would he give to the public. Proceeding Mr. Dhondy contended that the re-organization of the Water Department which had served the public for thirty years was unnecessary. It was apparent that the Water Engineer was himself in fault and why should they trouble the poor subordinates ?

Mr. Jafferbhai Rahimtulla said he had a difficulty in regard to the last paragraph of Mr. Mehta's motion. This paragraph referred to the complaints in regard to the distribution of water and stated that if the existing water department was unable to adopt measures to remove these complaints, the Commissioner should proceed to reform and re-organize the department. What was the meaning of the word reform ? Mr. Mehta often accused other members of moving vague propositions, but he had been here caught in the same difficulty himself. It might mean that the Commissioner was to come forward and say that an additional staff was necessary. He understood that the Commissioner had already interpreted the motion as meaning that outsiders were to be put into the department, and old people should be set on one side. He understood that an outsider, who was thrice refused by Mr. Harvey had been accepted by Mr. Sheppard. If that was to be the interpretation of the resolution, the Corporation would pause before passing it. If on the other hand the motion meant that the Commissioner was to address a mild remonstrance not amounting to censure to Mr. Bruce, the Corporation would agree to it.

Mr. Manmohandas Ramji spoke against the motion.

Dr. Jehangir J. Cursetjee thought the Corporation would do well to follow Mr. Mehta on the present occasion.

Mr. Unwalla said that if the proposition were passed, the public would certainly await with keen interest the report of the special officer regarding the question of leakage in the mains and reservoirs. If he reported that there was very little wastage from the mains or reservoirs, the inevitable conclusion would be that there was wastage in the domestic consumption. What was then to be done by the Corporation ? Mr. Mehta's motion implied that they would pass a resolution in terms of the report of the Committee recommending meters. What were Mr. Mehta's views on this point ?

Mr. Mehta said it was not a question of his views, but it was a matter for the Corporation to decide.

Mr. Unwalla said he would vote against the motion.

Mr. Cuffe said the series of propositions brought forward by Mr. Mehta would probably find acceptance. Of course they shelved for sometime the experiment with the meter system and one of the drawbacks of that was that it threw them back upon one experiment only. The measure now suggested for preventing waste seemed rather a weak reed to lean upon. If they failed, and loud and recurring complaints were made in every hot season he supposed the Corporation would consider what the alternative proposal was. The duplication of the Tansa main would cost some fifty or sixty lakhs of rupees. If they could not check waste and increase the supply by other means to such an extent in the hot months as to prevent complaints there was no alternative but to bring more of the Tansa water to Bombay. The ratepayers' meeting no doubt took that matter into full consideration; if they didn't they ought to have done so (laughter.) According to the "Municipal Journal" meters in Melbourne had been found to prevent waste to such an extent that it had been found possible to supply water at a very small charge. He believed that in Bombay the meter system had never had a fair chance of becoming acceptable to the people owing to the conditions in which it was introduced. It was quite certain that in the past, many of the meters supplied to the public of Bombay had been somewhat unreliable (Hear, hear, and voices: "14 per cent." and "47 per cent.") that had something to do with the hostility to their use. Then look at the charge they made for water supplied by the meters. (Hear, hear)—and the terrible bludgeon clause which the Standing Committee adopted under which when a man had had a meter for a number of years and had exercised all the care and economy possible in its use, suddenly finds himself called upon by the Municipality to pay upon a four per cent. basis. (Hear, hear.) These conditions might easily be modified. If he were anxious to introduce to the market something which the market had not been accustomed to receive he did not think he would charge the maximum price for it at first. He contended that having supplied meters which were above suspicion they should supply water at rates much below those charged at present, and at the same time abolish that bludgeon clause by which they could charge on the four per cent. basis. Referring to the Water Department and the complaints that had been made, he said the latter had been associated quite as much with the quality of the Tulsi water as with insufficient supply in certain parts of the town. Mr. Mehta held that the quality of the water was not so bad as it was made out to be, but either he did not trouble the Tulsi water much or he blended it with a liquid of a more potent character. (Laughter). The fact that they recommended an expenditure of over five lakhs of rupees for the construction of mains and filter beds appeared to him to prove that the water

about which complaints had been made was not wholly under the control of the Water Department. In common with other departments of the Municipality this Department suffered from the defects of the system inaugurated in the time of Mr. Acworth, the system of promotion by seniority, a system which worked departmentally might be perfectly good, but which when worked interdepartmentally in many cases put round men in square holes. It was a system which to a greater or less extent impaired the efficiency of a department and which no members of the Corporation would dream of adopting in the conduct of his private affairs. (Hear, hear). The Water Department had in some measure suffered from this. He hoped the Commissioner would bear in mind in future the essential qualifications which were necessary if a man appointed in the Water Department was to successfully carry out the duties allotted to him. Some 20 or 25 sub-inspectors had been appointed for the prevention of waste, but the measure was doomed to failure, because the qualifications necessary for carrying out the very delicate duties involved were higher than those possessed by the men now employed in the department. His advice to the Corporation was to sweep away lock stock and barrel those twenty-five sub-inspectors and appoint seven or eight men to carry out the various measures spoken of in the report which would probably in time give happier results than had been so far obtained by the Waste Prevention Department. He hoped the Corporation would at this stage adopt the proposals submitted by the Hon. Mr. Mehta.

Mr. Hassambhoy Visram thought there was one loophole in the motion which would ultimately lead to the adoption of meters in the City, a course to which he was opposed. Somebody in England wanted to sell meters to the City at a large amount (laughter) and the City, he contended, had not the money at its disposal.

Khan Bahadur Darashah Chichgar urged the application of Deacon's meters to ascertain leakage and quoted the opinions of Mr. Mansergh, Mr. Baldwin Latham and other eminent engineers in regard to the use of meters in domestic water supplies. He had, he said, kept an open mind on the subject and if the authorities insisted that they should try meters they must give them an opportunity particularly in those districts where waste took place.

Mr. Kabraji, while approving the motion thought it should cover defective fittings and taps. He proposed as a rider to be added that the Committee should report on the feasibility of fixing automatic or any better type of taps to stand pipes, etc., in the public streets.

At this stage there were cries of "vote, vote."

Mr. S. D. Khote seconded Mr. Kabraji's amendment.

Mr. Bomonjee Petit proposed the adjournment as it was five o'clock.

The motion for adjournment was negatived.

Mr. McDonald said he was known as an advocate for the meter system and he had been such since he came to think of it, though he did not think it likely that the meter system would be carried. He had read the reports of Mr. Tomlinson, Mr. Murzban and Mr. Bruce and had had long conversations with Mr. Bruce. He heard the statement made by the Hon. Mr. Mehta the other day which would have convinced a person with brains of wood if he wanted to be convinced. He had never been so satisfied with a statement as he had been with that of Mr. Mehta the other day. The fairness of it almost took his breath away, not because Mr. Mehta was not always fair but because it was against his own argument. He said he had a meter and at first his bill was for two lakhs of gallons of water, but with care this was reduced to 24,000 gallons. One statement of Mr. Mehta's was that it had never been the thought of the Committee to charge for the meters. But Mr. Harvey's idea was, though he modified a suggestion made by Mr. Murzban. He (Mr. McDonald) thought that if meters were introduced they would have to modify their price for water. They could not meter the whole City within fifteen or twenty years so the argument that the expense would be something horrible was done away with, because they would only have to put in a certain number in a year. He could see nothing wrong in Mr. Mehta's proposition except in reference to the appointment of a Municipal employer as the Special Officer to apply Deacon's meters to test the mains. He was quite ready to believe that every Municipal employee would be absolutely correct in the report he would make on the subject, but would they get people to believe that. They would say he was the mouth piece of this man or the other. He therefore suggested that the motion should be altered so that an outsider should be appointed and he would even go the length of asking Government to appoint a man for the purpose. In reference to Mr. Bruce he was quite well aware that he might look for the fragments of Mr. Bruce's skin over the Corporation Hall—metaphorically of course—but he was hardly prepared for so much as he heard. He admired the fairness with which Mr. Mehta put things though he did not go so far as did Mr. Mehta. He did not say Mr. Bruce was perfect, but he was an absolutely correct and able engineer. They could not get a better in the Presidency of Bombay. He was besides an absolutely upright man; they could not get one in the Presidency more so. (Hear, hear). It had been said that he hated the natives because he was one of those missionary men. That was the first time in 35 years he (Mr. McDonald) had heard such a charge brought against a missionary man. Mr. Bruce's cry was always the other kind. He told them that he loves the natives, he might not do so always (a laugh). What he did dislike was the crooked ways of the people and not the people themselves. He (Mr. McDonald) would recommend to Mr. Bruce that when he was going to apply the Deacon's meters he should have



somebody with him who would be able to give cooling drinks here and there in the hot weather as had been done before. But he was afraid Mr. Bruce would in no wise follow his advice.

Mr. Gamadia, moved and Mr. Hormusjee seconded the adjournment.

This being carried the President adjourned the meeting.

On 2nd August 1901, the Corporation resumed the discussion on the water question.

Haji Yusuf Haji Ismail moved an amendment of the original motion, deleting the words "That before proceeding to decide that the experimental measures recommended by the committee be taken in hand." He said this referred to that recommendation which had been the cause of all the agitation and orations of the Board.

Dr. Dinshaw Master admitted there was waste of water in the City by the people, and also by the Municipality, but the guilt, he contended, was greater on the part of the Municipality. Regarding domestic consumption, he measured the quantity of water he used for his morning bath, and he found that though he used it sparingly it amounted to twenty gallons. (Laughter.) The quantity used by Europeans for their morning tub would be about forty gallons. The question of deficient water-supply was one of long standing, and he believed the only remedy would be to duplicate the main from Tansa whether it cost fifty or sixty lakhs.

Mr. Jehangir B. Petit objected to the constitution of Mr. Mehta's Committee, and suggested other names. He contended that the arguments against meters were so weighty that they should not be introduced in the future, and they should place on record a denunciation of them to the effect that they shall not be adopted at any time. (Hear, hear, and laughter.) The London Water Companies decided not to adopt meters because they would reduce income (Mr. Mehta: Hear, hear). He asked if Mr. Mehta would accept the names he suggested for his Committee.

Mr. Mehta: Are you going to propose Mr. Sukhia?

Mr. J. B. Petit (feelingly); No, no. (loud laughter). He moved as further amendment to the motion that the report of the Water Committee be recorded with a pronounced denunciation of the meter experiment recommended therein, and a special officer be appointed to test the mains, etc.

Mr. Eknath Khote seconded the amendment.

Mr. Shroff said it had been carefully calculated that the cost of metering the whole city would be half a million sterling ("more"). The cost of laying an alternative main from Tansa was put down at half a million sterling. They could get that work done without imposing a single cent of additional taxation, Mr. Hormusjee had shown that they had been recovering a large amount of water tax during the last few years; something like 2 1-2 lakhs of water taxation more than they were entitled to.

The Hon. Mr. Ibrahim Rahimtula: May I say a word. We

have recovered 95 lakhs less than the expenditure on the Water Department during the last few years.

Mr. Shroff: That, Sir, is a matter of calculation, (Loud laughter). He contended there was no necessity for meters, and no absolute necessity for laying an additional pipe from Tansa for some years to come. As to how they were to meet the present difficulties, the question was whether they had an officer who would give them an equal distribution of water. The head of the Water Department was rather obstinate in his own views. From the commencement he took charge of his duties with a sort of prejudice ("No"). It was perfectly manifest from that famous letter which caused so much uproar in the City that he was not only cantankerous, and quarrelled on every side with the living but he was even quarrelling with the dead (Laughter). Mr. Bruce said that from the date of his appointment to his present post it was apparent to him that the defects existing in the design and construction of the water works which, unless remedied and counteracted, must result in an insufficient water supply. They knew what eminent men designed their water works, and here was an officer who had the courage to say that defects existed in the design and construction of the water works ("so they do"). Did that not prove that he quarrelled with the dead. (Laughter). It showed that he was a person who condemned everybody and everything. They should ask him whether, with the materials at his disposal, he was in a position to give an equal distribution of water in the City. If he said "no" then out of self-respect he should retire. All this hue and cry had arisen because of the whim of one person. There was no such hue and cry in the time of former officers. ("But there was.")

Mr. Aitken thought it would be well if somebody could invent a meter for recording oratory (Mr. Cuffe: And charge for it). He agreed with the Hon. Mr. Mehta about the want of light coming to them from most of the speeches made at the rate-payers' meeting and elsewhere. The one idea appeared to be that if they got meters they would pay more for the water. But he never heard anybody say that milk was dear in Bombay because "gowless" sold it by measurement. Meters had no connection whatever with the price to be paid for water. It was clear that meters must be the most absolutely just and economical way of distributing the water, because each man would then pay for exactly so much, as he used or wasted. It was pointed out by Mr. Rehsch that the rate at which water was now charged for the cost of water by meter would be heavier than it is, and that some proposal for reducing the rate for the water should accompany the introduction of meters. Mr. Santo Crimp told him (Mr. Aitken) that the waste of water from the stand pipes in Bombay was something fearful. But he didn't need an expert to tell him that. He referred to the weight of expert opinion in favour of meters and pointed out that Mr. Santo Crimp's was not opposed to the view of Mr. Tomlinson, Mr. Murzban, Mr. Snow and

Mr. Bruce. Mr. Santo Crimp said that meters were not necessary if certain other measures were adopted. Mr. Santo Crimp was not an expert on the manners and customs of the people of this country. He suggested an inspection staff, but let them imagine a staff of sepoy running up and down looking after running taps and imagine the harvest of four anna pieces they would secure. (laughter) In regard to the portion of the resolution referring to the reform and reorganisation of the Water Engineer's Department he suggested that it should be dropped. (Hear, hear.) It was possible there were two sides to the question, and the Corporation were not in a position to judge. It was exceedingly difficult for a man to do good work if every popular clamour raised against him was taken up, and if he had a hundred masters to serve. He had seen a letter from a former officer of the Municipality in which he said: I see Mr. Bruce is running the usual gauntlet. I know he will be as glad to get away from Bombay, as I was. They could guess who that officer was.

Sir Bhalchandra Krishna hoped Mr. Mehta would not withdraw the latter portion of the resolution, as that was the vital part of it. He agreed that Mr. Bruce was honest and upright, but discretion, sympathy, tact, and courtesy were also necessary in the head of a department. (Hear, hear). He was forced to say that Mr. Bruce in the administration of the Water Department had shown a great lack of these qualities. In sending that historical letter he condemned himself, for works had been sanctioned by the Corporation which had not been carried out.

Mr. Hormusjee and Mr. K. N. Wadia having spoken, the Hon. Mr. Mehta replied on the debate reiterating his opposition to the introduction of meters. In regard to the officer to be appointed to test the mains, etc., he withdrew the word "Municipal," as he saw it might be advisable to appoint an outsider. He also agreed to add Mr. Gamadea, Dr. Dadachanji, and Mr. Maumohandas Ramji to his proposed Committee.

Mr. J. B. Petit and Haji Yusef Haji Ismael then withdrew their amendments, and Mr. Mehta's motion with an addition by Mr. Hormusjee, was adopted.

The proposal by Mr. Kabraji to introduce automatic taps in stand-pipes and chawls and large buildings was rejected.

The following was the resolution adopted.

"That the report of the Committee appointed by Corporation Resolution No. 722, dated the 22nd April, 1901, on questions relating to the water supply in Bombay, be recorded. That before proceeding to decide that the experimental measures recommended by the Committee be taken in hand, the Corporation think it desirable that an Officer specially chosen by the Municipal Commissioner in consultation with the Executive Engineer, be deputed to ascertain, by all possible means, the quantity of water actually brought into the City, and also to ascertain, by application of Deacon's meters and all other

available means, the amount of waste occurring through leakage from the mains and reservoirs and the amount of consumption or waste of water of all sorts which takes place except such as takes place, after reaching house pipes. The Special Officer should report to the Commissioner through the Executive Engineer the results arrived at by him, and the Commissioner should be requested to submit the report with his own remarks to the Corporation.

"That the Commissioner be requested to instruct the Special Officer to work in consultation with a Committee who should be requested to carefully observe his work and report thereon to the Corporation.

"That the Corporation desire that the following works, which are considered necessary for carrying Tansa Water direct to the Malabar Hill and Bhandarwada Reservoirs, should be taken up and prosecuted as quickly as possible, the cost being met as recommended in Standing Committee's Resolutions No. 6311, dated the 4th October 1899, and No. 7768, dated the 8th November, 1899 :

Main along Kala Chowkey Road from Parel Road to Ghorupdeo and along Reay Road to Bhandarwada Reservoir of 18-inches diameter except for 600 feet for which 24-inches cast iron pipes in stock are to be used. The 18-inches to be cast iron for half the distance and steel for the other half. The main to have an emergency connection with the 48-inches Bhandarwada outlet ... ..	Rs. 1,40,200
9-inches service main connected at one end with Bhandarwada Reservoir and at the other with the Sewree Road 12-inches main and supplemented by a 9-inches main in Connaught Road connected with the 16-inches main in Parel Road ... ..	51,150
22-inches steel main from the 48-inches Tansa main at Chinchpokli to Grant Road, there connecting with existing 27-inches and continued to Malabar Hill with 32-inches steel main ...	2,07,300
82-inches steel outlet main, Malabar Hill to Chowpati ... ..	32,150
16-inch main from 24-inch Vehar main at Parel Bhoiwada to Parbadevi Road, and 9-inch thence to Century Mill at a cost of ... ..	55,750 a
	76,580 b
10-inch and 8-inch main in Grant Road to enable Kamatipoora to be supplied from Bhandarwada at a cost of ... ..	14,100
8-inch main in Tardeo Road from Forjett Road to Falkland Road, for the supply to mills in the vicinity at a cost of ... ..	9,800
Total ...	5,09,950
	or 5,80,780 c

a If of steel,

c If the 16-inch Main from 24-inch Vehar Main is to be made of cast iron.

b If of cast iron,

"That the Commissioner be requested to submit at an early date the plans and estimates for additional filtering accommodation promised in his letter No. 6892, dated the 14th June 1901 together with proposals for meeting the cost of the additional filter beds.

"That the Commissioner's letters No. 7370, dated the 19th June 1901 and No. 9705, dated the 10th July 1901, with accompaniments be recorded, and the Commissioner be informed that the Corporation are of opinion that the distribution of water in the City is of a character to justify in a great measure the loud and recurring complaints which are made by the ratepayers, and that, if the existing Water Department is unable to devise measures to remove these complaints, the Commissioner should proceed to take steps to reform and reorganize it."

The following was the addendum by Mr. Hornusji "that the Commissioner be requested to prepare and submit to the Corporation at his early convenience a scheme for an efficient staff for a systematic and periodical survey of the mains and pipes so as to detect leakage and to remedy and stop waste of water."

Water supply to Kurla Municipality.

In 1893 the Corporation agreed to supply water to the Kurla Municipality in accordance with an agreement, copy of which is no doubt in the Chief Accountant's Office.

Water supply to Bandora Municipality.

In 1897 a proposal was made to charge the Bandora Municipality for the water supplied by meter measurement to stand pipes in the Segregation Camps and Plague Hospitals in Bandora, for 3 months, at Re. 1 each per stand pipe. This was agreed to.

Water supply to Santa Cruz and Thana.

On 1st February 1900, the Corporation adopted the Committee's report recommending the supply of water to Santa Cruz.

On 9th October 1899, the Corporation agreed to supply water to the Thana Municipality at the rate of 12 annas per 1,000 gallons and on certain conditions.

Water supply to Andheri.

On 28th January 1897, the Corporation authorised the Municipal Commissioner to lay a 3-inch main with stand-pipe and trough at Andheri at Mr. Nusserwanji Jehangir Wadia's cost as proposed in Mr. Snow's letter No. 22731 provided the Collector of Thana through his District Board agreed to recover the water rates on behalf of the Bombay Municipality, namely, at 8 annas per 1,000 gallons for water supplied to the stand-pipe and at 12 annas per 1,000 gallons for the water supplied to the owners of private bungalows and properties. This arrangement was for a period of 5 years.

## CENSUS OF BOMBAY.

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The population in 1667 was estimated to be 10,000.

Census of  
1667.

A census is mentioned as having been taken in the year 1716, giving only sixteen thousand persons, but it probably embraced only the Fort and a portion of the Island.

Census of  
1716.

A census, taken in the year 1814-15, of which the record is imperfect, gave 11,000 as the population of the Fort, and 2,21,550 as that of the whole Island, and 20,786 as the number of houses. The British, Military, Marine and Civil were stated to be 4,300 persons, the resident native Christians and Jews 12,300, the Moosulmans 28,000, the Hindus 1,03,800, and the Parsees 13,150. The floating portion of the population was given as 60,000. This census is quoted in Hamilton's Gazetteer.

Census of  
1814-15.

In the year 1833-34 another numbering of the people was undertaken, but after it had continued nearly twelve months the only result reported was, that during that time 1,17,016 adults had been counted. The Senior Magistrate of Police, under whose direction the census was taken, added to the number of adults an equal number for the children, and reported 2,34,032 as the probable total population.

Census of  
1833-34.

Between the years 1844 and 1848, Government had several times under consideration how to obtain an accurate return of the population, and in 1849 accepted the offer of the Superintendent of Police to furnish it. The money and establishment at the disposal of that officer were altogether inadequate, and his attempt ended in failure; the tables were however published in the *Government Gazette* of 10th January 1850. Two more attempts were made in the year 1851, but with no better success; the results of these were not printed.

Census of  
1844-48 and  
of 1851.



Proposed  
Census Act.

On Sir Bartle Frere's entering on the Government of this Presidency in 1862 His Excellency caused a Census Act to be brought before the Local Legislative Council. This Act, rendering it obligatory on house-holders to give correctly the required information, was approved of and sanctioned by the Government of India. The educated part of the native community warmly supported the measure, and advocated it in their various spheres of influence among their countrymen; and, to increase the intelligent co-operation of the heads of the community, the Governor assembled the Native Justices of the Peace, and explained how the knowledge of the people, that is sought for in a Census, conduces to good government and to sanitary social improvement. The leading members of the different sections of the community had meetings, and after having conferred together, they issued explanatory circulars in their different languages, and called on all to give their active aid to the enumerators. Mr. Dosabhoj Framjee Karaka circulated, at his own expense, two thousand copies of a pamphlet, in which he explained the objects and uses of a Census, and the methods of taking it that have been followed in different countries.

Instructions having been given by the Government to the Commissioner of Police, he was left to carry out the appointed measures. He was to be allowed the aid of such clerks as could be spared from the Government Offices for the day of the Census, and the rest of the enumerators were to be hired for the work.

A few men were at first engaged to ascertain the probable number of schedules that would be required in the various languages in use, and also to estimate how many lists would probably be filled in by the house-holders, and how many would be left to the enumerators to fill in. When this inquiry had proceeded for some days it was found that the work was of greater magnitude than had been anticipated. The number of men engaged in this preliminary inquiry had repeatedly to be added to, and serious inconvenience was experienced in methodizing the work from many of the streets and lanes being unnamed, and nearly all the houses being unnumbered, as the assessment numbers were few and irregular, and they were nearly useless for registration purposes.

On the eve of the intended distribution, a communication was received to the purport that the Act had been disallowed by Her Majesty's Government in England. The Governor of Bombay (and this is most interesting), having met with cordial support from the Native community, and having every assurance that the people were not only willing, but that the leading and educated part of them was very desirous to have a Census taken, the work was allowed to proceed without the sanction of penalties.

There were altogether 921 persons engaged in the enumeration on land; of these, 148 were employed as Superintendents of Districts, and 773 as visitors and enumerators. Of the whole number 331 wrote in English, 147 in Gujarati, 423 in Marathi and 20 in Hindustani. Besides these there were other 70 enumerators employed in the Harbour. Thus for a registered population of 8,16,562, there were 843 enumerators, or one for every 968 individuals, concerning each of whom there were seven points of information to note, after questioning and perhaps cross-questioning the unwilling and stupid, to elicit the truth.

Owing to so many of the enumerators being lent or engaged for one day only, instead of all having to perform, each in his own district, the distribution, the collecting, and the scrutiny of the house-holders' lists, great trouble and delay was experienced in gathering in the schedules and correcting them. Had it not been for the note on the back of each return showing the number of the families in the house to whom census papers were given, many lists would have been lost, as some houses were inhabited by many families. In one instance fifty schedules had been left in one tenement, and only twenty-six were spontaneously returned, but on making the scrutiny the deficiency was detected through the note on the back of those received and the remainder were recovered.

In 1662, the population was 10,000 while in 1716 it was 16,000, a hundred years later it was 2,21,550 and in 1901 it was 7,70,843.

Census of  
1716, & 1901.

## Old Bombay.

Dr. Weir in one of his reports publishes the following notes about old Bombay which was furnished by Dr. Gerson DaCunha :—

“ There is a certain historical appositiveness in the notes being written by a *savant* of the ancient name of DaCunha :—

“ To form a correct idea of the development and growth of Bombay one must study its conditions from the earliest historical times, which may be divided into three periods, *viz.*, Hindu, Mahomadan and Portuguese, followed by the modern one, which is British.

“ The Hindu period from the early dawn of history to the conquest of this part of the Western Coast, including Bombay, by the Mahomadans is mostly made up of legends, tales and traditions founded on more or less authentic sources. This is a history of the gods, temples and villages, each bearing its own name, which names by process of time have in some instances been rendered meaningless, while in others they can be traced back to their original sense. These Hindu-chronicles do not give us any indication of the trade or population of Bombay, but it is presumable that a place with so many and important temples having their own *Mahātmyas*, or panegyrics, written either in Sanserit or in Prakrit, such as Walkeshwar, Mumbadevi, Kalbadevi, Mahalakshmi, and so on, may have had a fair amount of population, and a state of civilization generally met with in towns resorted to by pilgrims from distant parts to perform religious rites at their shrines.

“ In the early centuries of our era, it appears that Bombay, with the adjacent country, belonged to the Rashtrakuta Kings of the Deccan. Later on it belonged to local chieftains or naiks, tributary to more powerful Princes of the Deccan, who were also masters of the North Konkan.

“ Of the Mahomadan period, Bombay has retained still fewer monuments than of the Hindu period. At the close of the 13th century, Bombay and Mahim were under Bhimdeo, from whom it was taken by the Mahomadans. These latter have left the vestiges of their rule more at Mahim than at Bombay. They are probably the Forts

of Mahim and of Bombay,—this at the place where the Arsenal or Castle is now,—and the mosques and tombs of *Pirs* at Mahim.

“Although it cannot be said, as some suppose, that Bombay really had no history before the Portuguese occupation, the annals of the latter are fuller in detail than those of both the Hindus and Mahomadans.

“To pass on, then, to the Portuguese period of the Bombay history, the first fact recorded by the chroniclers of that nation is the occupation of the place as early as 1527, after the defeat of the fleet, in the Bombay harbour belonging to the King of Cambay, during the Governorship of Lopo Vas de Sampaio. In January 1531 the Viceroy Nuno de Cunha selected the island of Bombay for the rendezvous of his formidable expedition to Diu, holding there a grand review of his troops.

“It seems that the island of Bombay was not such a rocky, barren place as it is generally represented to have been then. Soon after the acquisition of the island the Portuguese, the soldiers of Heitor da Silveira, gave it the name of *Ailha da boa vida*, or, ‘the island of the good life,’ from the pleasant days they spent there, which designation was correct till the middle of the sixteen century, as stated by D. Joas de Castro in his *Roteiro de Goa a Diu*, p. 81. At last the native name of Mumbae, ultimately changed into Bombay, after passing through the Portuguese stages of Mumbaim and Bombaim, prevailed. About the middle of the sixteenth century, the island of Bombay was granted in perpetuity, paying a yearly quit-rent, to Dr. Gareia d’Orta, author of a work on Indian drugs printed for the first time at a missionary press in Goa in 1563.

“On the conquest of Bassein and the districts around by the Viceroy Nuno da Cunha in 1533, Bombay formed one of the eight divisions into which the province of Bassein was divided.

“Bombay was divided, for a better land administration like other districts, into several villages, the name of Bombay being confined to that narrow part of the island which extends from the Apollo Bunder to Mahatuxmi and from Girgaum to Bomerkadi. The other villages were Mazagon, Mahim, Parel, Warlee and Sion.

" The early documents from the time of the conquest in 1533 to 1550 refer to Bombay in this narrow sense. This Bombay proper was rented to certain individuals for an annual rent, varying from year to year, excluding the revenue derived from the Walkeshwar custom-house, which was farmed to a Hindu by name Posagy.

" In 1548 Bombay was rented to one Mestee Diogo for 1,432½ pardaos, which arrangement probably lasted till 1550. It was the system of the Viceroy D. Joao de Castro and of his immediate successors to reward the services of distinguished Portuguese Officers by granting them lands in perpetuity on the payment of yearly quit-rent.

" From 1550 it seems that the island of Bombay was granted to Dr. Garcia d'Orta on the condition of his paying the above-mentioned quit-rent. What those pardaos are now equivalent to is rather difficult to say. The value of this coin has varied considerably from the earliest times of the Portuguese rule in India. In old times by *pardao* was meant a gold *pratapa* or *hûn*, equivalent to a gold pagoda of 3½ rupees ; while the modern *pardao* is worth only half a rupee. The Bombay rent in pardaos was most probably in gold coins. Dr. Garcia d'Orta lived in India from 1534 to 1572. He was granted the Island of Bombay in 1550 and was its proprietor up to 1572. He mentions Bombay three times in his work under the name of Bombaim and Mombaim, as well as his tenant Simao Toscano, who sent him mangoes from a tree which had fallen into the habit of flowering and fruiting twice yearly. There is no record of Dr. Garcia having left any descendant in India, although Cardinal Saraiva mentions the names of both Garcia d'Orta and of Nicholas d'Orta without saying a word about their relation to each other. The latter is said to have gone from Goa overland to Madrid in 1606 and returned to India by the command of King D. Philippe II of Portugal and III of Spain. From want of succession the Island then appears to have relapsed.

" In 1634 we are told that behind the Fort, where now the Arsenal or Castle is, was a small thickly populated village under the lordship of the grantee, whose name, however, is not mentioned, and who had to provide for its defence. The proprietor of Bombay was called *vazador*. The population (of the castle) consisted of 11 Europeans, all

married and 59 natives able to carry arms. The Captain lived in the Fort, while a little behind it was a chapel and a house belonging to the order of the Augustinians. When the island was ceded to the British, the tradition current was the Governors lived in the same castle, while the chapel was converted in the course of time into what is now called the old Secretariat, the Augustinians going to the island of Coles or Colaba, which was not then included in the territory cession of Bombay. In that old Secretariat there began to live the Governors of Bombay until the beginning of this century, when they repaired the old church and convent of Franciscans (not Jesuits, as it is generally supposed) at Parel, where they changed their residence. Between the castle village, where the lord of the island was living, and old village of Cavel, where the native converts of the Portuguese missionaries were settled, was a vast cocoanut plantation, now the Esplanade, in the middle of which was a church now represented by a cross, and on the opposite side, close to the modern Elphinstone School, was its cemetery.

“The village of Cavel is of great antiquity ; it was there that a considerable amount of the *Rashtrakuta silver coins* were found.

“At the time of the cession of the Island to the English in 1661 the island of Bombay was owned by Donna Inez de Miranda, widow of D. Rodrigo de Mancato. She lost through the cession, dominion or the rights of a grantee she had over the island, but not the revenue she used to derive from her estates, which were eventually bought from her and her descendants by the East India Company, just as the village of Mazagon was bought from the Tavora family, and so on, at a later date.

“I need not mention the conditions of growth of Bombay after the cession. But an important Portuguese document of a later date, viz, 1727, give an accurate idea of what Bombay was then, and its value as land property. This inquiry about the value of the island was made with the view to buy it back by the Portuguese, owing to the repeated quarrels of the Bandora Jesuits with the Bombay English. This is the document : —Bombay had two towns, Bombay and Mahim, and eight villages, Mazagon, Warlee, Parel, Vadala, Naigaon, Matunga, Daravi, and Colaba. It had 7 hamlets—2 under Vadala,



2 under Daravi, and 3 under Parel. It had 5 Koli quarters—in Bombay, Mazagon, Warlee, Parel and Sion. There were 3 salt-pans—Kaim near Matunga, Sewree and Vadala. The estimated produce and revenue of the different parts of the island were: of the towns, Bombay 40,000 cocoa palms, some rice lands and old rice lands now built on, and Mahim 70,000 cocoa palms and 592 *mudas* of rice.

“In 1661 the island of Bombay (including Salsette and Tanna) was ceded by the King of Portugal to England. The cession arose out of the marriage of the King of England, Charles II., or the marriage was made the occasion of the cession; the Portuguese authorities were not willing to accept the treaty; with possibly a keener instinct of the value of the Island than those at a greater distance and in a far-off land, they were slow to allow them to pass out of their hands; negotiations were prolonged, and it was not till 1664 or 1665 that the English took possession of Bombay. In 1668 the King of England handed over the island to the Governor and Company of Merchants of London trading into the East Indies, for an annual rent of £ 10. There is one condition in the charter by which the East India Company obtained possession of this Island, of great interest in connection with the development of the civic privileges and the liberties of the citizens, and that condition is that ‘all persons born in Bombay were to be accounted natural subjects of England’; freedom of religion and of conscience was proclaimed, and a city founded by adventurous spirits became a refuge to adventurous fugitives. In liberty this city has grown, may the spirit of freedom ever animate its citizens !

“This, according to Fryer, was the condition of the English settlement in Bombay on the landing of the first Governor in 1664:—“ They found a pretty well-seated but ill fortified house, four brass guns being the whole defence of the island, unless a few chambers housed in small towers, convenient places to scour the Malabars, who heretofore have been more insolent than of late, adventuring not only to seize cattle, but depopulate whole villages by their outrages \* \* \* About the house was a delicate garden voiced to be pleasantest in India.” This

is how Fryer found the Town:—"It is a full mile in length, the houses are low and thatched with oleas of the cocoa trees, all but a few the Portugals left, and some few the Company have built. The custom house and warehouses are tiled or plastered, and instead of glass, panes of oyster shells are used for their windows;" and we are further told "the English have only a burying-place called 'Mendam's Point,' from the first man's name therein interred, where are some few tombs that make a pretty show at entering the Haven, but neither Church or Hospital, both which are mightily to be desired."

"The Husbhee of Jinjeera, who held the office of Admiral to the Emperor Aurunzeb, was a powerful foe of the English colony, and Bombay had been overawed by the forces of the Jinjeera sea-king: it is said that he held all Bombay outside the Castle for a year. He landed at Sewree in 1689, and the invasion caused the greatest consternation in the Island. Hostilities appear to have arisen through the English making war on the Mogul ships, and adventurous Englishmen roaming the seas plundering Indian commerce, and also partly through the prohibition at that early date to sell slaves in Bombay. This is what I read:—"The Sidi landed at Sewree on the night of the 14th February 1689 with 20,000 men, marched to Mazagon, took the Fort with all its ammunition and treasure, said to have been about £ 10,000, hoisted his flag there and made it his head-quarters."

"It was not till 1716 that the Governor, demanded the cession of the customs dues collected at Bandora, and the opening of the Tanna river to English trade, from the Portuguese. The two great English companies were united in 1702; but there were other bands of adventurous traders, or "interlopers," as they were then called, who bravely dared monopolists and sought to trade free; the account of one of these is too interesting to be omitted. We read—"An Association of Scotchmen had engaged in an effort to gain a share of the trade in India, but without that prudence and discretion for which their nation has been in other instances distinguished. They seem never to have had more than one ship, called the 'speed-well,' the captain of which was a notorious polygamist, who, having been brought up as a Highland drover, was little acquainted with the practice,

and still less with the science of navigation. At Batavia he permitted his ship to be driven on the rocks, where she became a total wreck, a small portion only of the cargo being saved." A good deal of cargo saved consisted of curious glass-ware, we are informed. This company soon disappeared and passed the way of other adventures.

"Although there is no record of any one having suffered death for religion in Bombay, poor witches—I suppose they were generally witches of malevolent disposition, who were tortured. The following curious instance of the conviction of a European witch is referred to in an article in the *Bombay Quarterly Review*. Near the Cathedral appears to have been considered the safest place to exercise the "devil;" this is the description of it:—"The records of the court of justice show that an ignorant woman, named Bastok, was more than once whipped for what was called 'diabolical practices.' Like too many Europeans of past days in India, this infatuated creature had imbibed superstitions, and professed to cure sick persons by the use of charmed rice. Convicted of this offence on the 5th of July 1724, she was admitted by the court to have been guilty of witch-craft, not from evil intention, but from ignorance, and so they enlighten her dark mind in this wise:—"The court orders that 'she receive eleven lashes at the church-door and afterwards she and all persons that are found guilty of the like do such penance in the church as customary.'"

"A difficulty, and source of unpleasant odours which existed more than 200 years ago, still exists. Fish manure is a valuable but unsavoury product, and 200 years ago it was as much objected to, by those who did not use it, as it is now; epidemics were ascribed to the putrid smell from the fish manure, or "Koot" as it was then written, so that the practice was repeatedly prohibited and as often, on the petition of the cultivators, again permitted. In 1733, the Koonbees who cultivated the rice fields fled to salsette because they were restricted from using fish manure. On the 22nd February 1742 the Fazendars or free-holders offered Rs. 10,000 to Government, on condition that the prohibition against fish manure was removed; they represented that unless the prohibition was withdrawn they would be ruined;

Government were persuaded then. Fish manure was however, used afterwards and it is still used.

Fryer had a very unfavourable opinion of the climate, for he writes, after describing the "power and state of the President"—"I reckon they walk but in charnel houses the climate being extremely unhealthy, at first thought to be caused by Bulesleo—rotten fish, but though that be prohibited yet it continues as mortal" he estimated the population of the Island at about 60,000; in fact most of the Island at that time might, according to this traveller, be described as a number of rocks above water.

In 1708, three presidences which were ruled by Governors in Council were created—*i.e.*, of Calcutta Presidency Madras and Bombay—each of which were independent of the others till a Governor General was appointed in 1773.

Creation of  
Presidencies.

It would be interesting to learn that in 1799, a corps of Fencibles, 1000 strong, was raised. Mr. Forbes equipped and paid 50 men. This corps was placed on the fixed establishment of Bombay in 1803, and subsequently became the 9th Regiment of Native Infantry.

Corps of  
Fencibles.

The Great Indian Peninsula Railway line to Tanna was opened in 1853. The Bhore Ghaut Railway incline was opened in 1863. A carriage road up the ghauts was opened in 1880. The Bombay Baroda and Central India Railway commenced extending their line to Bombay in 1864.

Opening of  
Railway lines.

In 1773 Mr. Holford made a successful voyage up the Arabian gulf, and conducted the first English ships straight to Suez. In 1776, five English ships entered the harbour of Suez.

The following Government advertisement regarding communication with Great Britain was published in 1797:—

"The Hon'ble Governor in Council having resolved to establish a regular monthly communication with Great Britain *via* Bassora, the public are hereby informed that private letters will be received for transmission at the office of the secretary to Government under the following regulations.

Communi-  
cation with  
Great Britain  
in 1797.

(1) That no letter shall exceed in length four inches, in breadth two inches, nor be sealed with wax.

(2) That all letters, shall be sent to the Secretary to Government with a note specifying the writer, and with the writer's name signed under the address, to be countersigned by the Secretary, previous to deposit in the packet, as a warrant of permission.

(3) That Postage shall be paid on delivery of the letter at the rate of 10 rupees a single letter weighing  $\frac{1}{4}$  of a rupee. Letters weighing  $\frac{1}{2}$  a rupee Rs. 15, and for those weighing one rupee, Rs. 20.

(4) Two mails will be transmitted by each despatch, one of which is intended to be despatched *via* Aleppo, the other *via* Bagdad. Letters in duplicate will be placed in each packet, or if single at the discretion of the Secretary.

(5) No packet or letters are to be received by the Commander of the packets but through the prescribed channel, nor will any, except through the same channel, be forwarded by the residents at Bassora.

(6) The mails will be despatched from Bombay on the 1st day of every month, and the first despatch will be on the 1st January 1798.

Published by order of the Hon. the Governor in Council.

JOHN MORRIS,

*Secretary."*

*Bombay castle 7th December 1797*

Establish-  
ment of Mail  
Service to  
England.

In 1838 a regular monthly communication between Bombay and England by the overland route was established.

The weekly mail service was established in 1869.

Slave Mar-  
ket in Bom-  
bay.

Slaves from Africa seem to have been bought and sold freely at Bombay, for a person named Niebuhr purchased a young catholic negro at Bombay, but gave him away before leaving India, for fear the Mussulmans in Persia and Turkey might accuse him of carrying off a Mohamedan boy.

Ladies in  
Bombay  
1739.

The Bombay Quarterly Review of 1856 states, that at Bombay and the subordinate stations in 1739 there were little more than sixty covenanted servants, about twenty free merchants, twenty married ladies, and four to

eight widows and unmarried ladies, and never more than seven European children. The Naval and Military Officers of the Company were not included among covenanted servants.\*

Malabar Hill is thus described by Dr. Fryer:—"On the other side of the great inlet to the sea is a great point abutting against old woman's Island and is called Malabar Hill, a rocky, woody mountain, yet sends forth long grass. At the top of the hill is a parsee tomb lately raised, on its declivity, towards the sea, the remains of a stupendous pagoda, near a tank of fresh water, which the Malabars visit it most for." \*

Malabar  
Hill in 1673.

The growth of Bombay City can better be imagined than described, and only those who have been residents can tell how wonderfully the City has improved. In the twentieth Century and during part of the Nineteenth Century; Bombay was known as "the City of Bombay." Prior to that, it was the Town and Island of Bombay, but the building of a causeway on the northern outskirts makes it no longer an Island. Over a hundred years ago, the City was designated "within the walls" and "without the walls."

Houses in  
Bombay.

Turning to the record of 1794, I find that there were 988 houses, within the walls and 6,659 houses, without the walls. The greater portion of the City was then under water. In that year there were only 430 Oarts and Gardens and Batty Ground. The Assessment of these properties at five per cent. amounted to Rs. 28,265-1-20 reas.

A hundred years later *i. e.* in 1894, the number of House property &c., liable to Municipal Assessment increased to 52,148 and their rateable value amounted to Rs. 2,72,98,360. The General Tax thereon, which was formerly known as the House Tax, is Rs. 18,58,710 per Annum.

At high tide Bombay was a collection of Islets and at low tide a pestilential swamp studded with eminences, but by the judicious construction of embankments and break waters to shut out the sea (the first of which *viz.*, Hornby Vellard) was constructed during the time of Governor Hornby) and by the construction of roads across

Hornby  
Vellard—con-  
struction of.

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\* Notes on Bombay.

what had hitherto been marsh land (the first of which Grant Road constructed in 1835) and by the gradual reclamation of the low lying lands, the sea was excluded and the Islets united together at their bases, thus a mass of land was formed containing an area slightly in excess at 22 square miles. It is an Island or rather a Peninsula connected with the mainland by two causeways and two lines of Railway.

Town Boundaries.

In 1794, Lieut. John Cunliffe, Civil Architect, was directed by order of the Hon'ble George Dick, Governor to set up large stones in certain places to serve as a boundary for the Town of Bombay. They appeared about 18 inches above the Terreplein and had cut on them "Limits of the Town of Bombay."

In 1813, Government issued a proclamation reducing the limits of the Town to the walls of the Fort. Statute 33 Geo. III chapter 52 authorised the issue of such a proclamation. It is evident that the intention of the Legislature was that when once a proclamation was issued defining the limits of the Town, another one could not issue reducing the limits. The proclamation of 1813, being a second one, the Justices refused to acquiesce in the construction of the Act, and continued without interruption to levy their Assessment to the extent of two miles from the Fort which they considered to be the undoubted limits of the Town and without reference to the proclamation of 1813; the Bench having been legally advised that the functions of the Governor in Council as to fixing the limits of the Town under the 33rd of the King had been exhausted when they originally marked out the said limits. Subsequently Government agreed with this view of the Bench.

A writer, two hundred years ago, when describing Bombay, states "the Unhealthness of the water bore a just proportion to the scarcity and meanness of the diet" and another adds "out of every 500 Europeans who came to live on the Island not 100 left it."

### **Health and Condition of Bombay.**

The following extract from "A Voyage to Surat" in the year 1689 by Mr. T. Ovington M.A., Chaplain to His Majesty, shows the condition of Bombay at that time:—



"Bombay is a small Island situate in about nineteen degrees of North Latitude, not eminent for anything so much as its Fort and Harbour.

"They have here abundance of cocoanuts, which bring some advantage to the owners, but very little either of corn or cattle but what is imported from the adjacent country, and these not in great plenty nor of very good growth. A sheep or two from *Surat* is an acceptable present to the best man upon the island, and the unhealthfulness of the water bears a just proportion to the scarcity and meanness of the diet, and both of them, together with a bad air, make a sudden end to many a poor sailor and soldier, who pay their lives for hopes of a livelihood. Indeed, whether it be that the air stagnates (for the land towards the Fort lies very low), or the stinking of the fish which was used to be applied to the roots of the trees instead of dung, or whatever other cause it is which renders it so very unhealthful, 'tis certainly a mortal enemy to the lives of the *Europeans*. And as the ancients gave the epithet of *Fortunate* to some islands in the West, because of their delightfulness and health, so the modern may, in opposition to them, denominate this the *Unfortunate* one in the East, because of the antipathy it bears to those two qualities.

"We arrived here at the beginning of the rains, and buried of the twenty-four passengers which we brought with us, above twenty, before they were ended, and of our own ship's company above fifteen: and had we stayed till the end of the next month, *October*, the rest would have undergone a very hazardous fate, which by a kind Providence ordering our ship for *Surat's* River-mouth, was comfortably avoided. A fortunate escape, indeed! because neither the Commander nor myself were in any hopes of surviving many days; neither temperance, the most sovereign medicine, nor the safest prescriptions in the physical art, could restore the weakness of our languishing decayed natures. And that which thoroughly confirmed to us the unhealthfulness of the place we had lately loosed from was the sudden desertion of our diseases, and return of health, before half the voyage to *Surat*, was finished; in the middle of which passage we manifestly perceived in our bodies as evident an alteration and change of air for the best, as our palates could distinguish betwixt the taste of wine and that of water.

"The Deputy Governor, Mr. *George Cook*, a pleasant and obliging gentleman, solicited me, upon the account of my function, to reside with him upon *Bombay*, and invited me, with all the proposals of a frank and generous civility, to wave my voyage and continue with him there, because they were then destitute of a minister. And indeed the deference I bore to such kind expressions, and to the duty of my calling were invincible arguments for my stay, had I not been satisfied of the immediate infallible sad fate I was under, like that of my predecessors, one

of whom was interred a fortnight before this time, and three or four more had been buried the preceding years, which common fatality has created a proverb among the English there, that *two munsouns are the age of a man*. This is much lamented by the *East India Company*, and puts them upon great expenses for supplying the island with fresh men in the room, of those that are taken away, and providing able surgeons, furnished with drugs and chests from *Europe*, to take care of the infirmaries and all that are sick \* \* \* \*

"The prodigious growth of vermin and of venomous creatures, at the time of the *munsouns*, do abundantly likewise demonstrate the malignant corruption of the air, and the natural cause of its direful effects upon the *Europeans*; for spiders here increase their bulk to the largeness of a man's thumb, and toads are not of a much less size than a small duck; whereby it is easily seen by these venomous creatures, what encouragement these infectious and pestilential qualities meet with in this place, and under what a contagious influence all the inhabitants must consequently be seated. This induced a gentleman one time in the Governour's and my company, and some other persons of note, to affirm that he believed it rained frogs, because he espied upon his hat small frogs about the bigness of the end of one's finger when he was at a great distance from any house or covering from whence they might drop.

"All wounds and contusions in the flesh are likewise very rarely healed here; and if they are, its with difficulty and extraordinary care; they happen generally to be very dangerous, and the cure admits of more delays and hazards in the healing than what is usual in other parts. But the corruption of the air has a more visible and immediate effect upon young *English* infants whose tender spirits are less able to resist its impressions, so that not one of twenty of them live to any maturity, or even beyond their infant days. Were it otherwise, the island might in time be peopled with the *Europeans* transmitted thither, as the *Western Islands* are, which belong to the Crown of *England*."

Health statistics.

In 1862, the preponderance of deaths in the 1st and 4th Quarters and the excess of male deaths at these periods began to attract attention. It was attributed to the increase and fluctuation of the population arising out of the progressive and rapid commercial development of the City. That it was rightly attributable to the influx of labouring classes the statistics of that time prove very clearly. In that year, the Superintendent of Mortuary Returns, as he was then called, Dr. Haines, began to observe the effect of the industrial enterprise and speculation on the mortality. Speaking of the mortality of 1862, he said:—"In the deaths after births the propor-

tion of the sexes has been 130·8 males to 100 females, which is, with one exception, that of 1849, a greater disproportion than has yet been recorded. Though with considerable fluctuation, the excess of male deaths has been on the whole gradually rising of late years. This has been before remarked and attributed to the increasing influx of labourers and others, drawn to the place by its progressive commercial development. That this is indeed the case would appear by the fact, that the proportion borne to the total mortality by that which falls under the ages of the greatest bodily activity, say from 15 to 55 is in Bombay excessively large." Dr. Haines then proceeds to examine the deaths in each quarter, and he gives a table shewing the number of males to 100 females that died at all ages during the ten years from 1853 to 1863 inclusive.

The mean of the ten years is:—

1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Mean of total period.
128·8	120·0	121·7	135·6	126·1

Mortality  
in 1863 as  
compared to  
1853.

The proportion of male to female deaths in 1862

was:—

1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Mean of total period.
128·4	127·8	120·5	136·4	130·8

Fever mor-  
tality.

In 1863 the full effect of the increased commercial activity had begun to be felt. The mortality during that year was the largest that has been recorded in Bombay, and nearly one third in excess of the average of the previous ten years. The deaths from cholera were 50 per cent. in excess of the average; the mortality from small pox and measles was nearly twice the average. Under the head of fever were returned 9499 deaths being the largest number ever before registered. A great mortality of young children was observed and the deaths from debility were unusually numerous.

Mortality  
among child-  
ren.

Writing of the great sickness Dr. Haines observes:—  
"The mortality from epidemic diseases is subject to great fluctuations from year to year and from month to month, so that the increase in the deaths from these causes in the past year is nothing surprising. But the deaths registered under the head of fever hitherto have been remarkably constant in number not only in the several years, but from month to month. During all the previous ten years the highest number was 8458 and the lowest 6231, the first 1329 or 18·7 per cent. above, the last only 898 or 14·4 per cent. below the average."

Mortality  
from Epide-  
mic Diseases.

Again speaking of the mortality Dr. Haines states :—

“It is sufficiently obvious from the figures in these tables that the state of the public health in this town is in the highest degree unsatisfactory. Causes fatally contributing to this result—squalid filth within doors and without, deficient arrangements for scavenging and conservancy and imperfect Drainage—have been amply exposed in the later Sanitary Report of Dr. Leith. But without at all disparaging the estimate formed of the evil effects on the public health of an atmosphere charged with the noxious effluvia arising from all these sources, it is unquestionable that these effects must be seriously enhanced by the low state of vitality of the mass of the population, caused by the difficulty of procuring sufficient and wholesome food, and especially by their breathing for ten or twelve hours out of the twenty-four the stifling atmosphere of their narrow and crowded chambers loaded with animal exhalations.”

Large as the number of deaths in 1863, there were 27·63 per cent. more in 1864; the deaths in 1864, were 58·9 per cent. above the mean of the previous ten years. 4,588 deaths, nearly  $\frac{1}{3}$ th of the whole, were due to cholera. The mortality from cholera exceeded the average of the preceding ten years by 129·3 per cent.

But among all the causes of death, the most striking numerical result is under the head of fever.

Fever mortality of 1861-65.

In 1865, the sickness that had been afflicting the city acquired its direct intensity. 9·11 per cent. more deaths than in 1864 and 65·59 per cent. above the mean of the preceding ten years were registered. 18,243 deaths, 65·39 per cent. of the total mortality was due to fever. Dr. Johnstone, the compiler of the report for 1865, thus refers to the mortality from fevers. “Fever appeared to have kept pace with the known influx of the laboring classes of both sexes during the years 1863, 64 and 65, in which there can be little doubt but that overcrowding had been gradually extending and that hard labour with exposure, vitiated air of crowded dormitories—in many cases a want of nutritious food, and high wages with consequent dissipation, were engendering their well known evils among the poor and badly bestowed classes of the community.”

In 1874, an unusually healthy year, the deaths from Cholera were 20. There were more deaths amongst Marathas than in 1868, 1871, or 1873, although the mortality of the whole population was slightly less than in those years. In 1875, Cholera was prevalent, and although more Marathas died than in 1872, the total mortality was slightly less. In 1876, with the reduction in the number of deaths of Marathas there was an increase in the total number of deaths.

In the Census report of 1872, the state of the city in these years, is thus referred to :—

“ The city was literally crammed with men, women and children for whom there was not sufficient house accommodation, and the consequent overcrowding of a great part of the people was excessive.” \*

Over Crowd-  
ing of Bom-  
bay.

Dr. Leith gives the following instance that he witnessed during his inspection of the town at the time of the Census of 1864. “ In a lane 9 feet wide the houses on each side were of two or of three floors and the various rooms were densely peopled, and the floors of the Verandahs were fully occupied while to eke out the accommodation in some of the Verandahs there were “ Charpays ” or cots slung up and screwed with old matting to form a second tier of sleeping places for labourers that were employed in the day time at the railway terminus or elsewhere. But when the crash came and Company after Company collapsed, the labourers that had been engaged in reclamation and other works were discharged, and finding no further employment returned to their Villages in the interior. It became therefore evident to all but especially to those whose avocations called them into labour quarters of the town that a decrease in the population had taken place, and that the figures as shown in the Census Report of 1864 no longer gave a trustworthy approximation to the numbers of the inhabitants. The migration of the labouring classes was necessarily followed by a diminution in the number of deaths, and that diminution was the greater inasmuch as the labouring classes were the worst lives of the population. The increased fatality of fevers of 1871-72 was due to the same causes as in 1865 and 1866 but on a smaller scale. It was caused by the

increase of the population through the number of labourers and others attracted by the new works that were going on. The same influences that proved fatal to the crowd of labourers attracted here in 1864-65, proved fatal to the labourers that had collected in 1871-1872. On referring to the deaths from fevers from 1865 to 1876 it is found that the increased mortality from fevers in 1871 and 1872, almost entirely affected Hindoos and Mussulmans, and that there was positively a less death rate in these years from fevers in the Parsee and European Communities than in 1868, the year in which the greatest quantity of garbage was removed. The health of the Parsees and European races in 1871 and 1872, did not appear to sympathise with the revival of fevers amongst Hindoos and Mussalmans, nor the Mussalman Community affected to the same extent as the Hindu. The special cause of the increased mortality from fevers amongst Hindus in those years was probably due to the influx of a number of the poorer classes of Hindu labourers.

Small-pox  
in Bombay in  
1872.

On the 22nd March 1872, the Health Officer (Dr. Hewlett) wrote to the Commissioner pointing out the prevalence of small-pox in the city and that it existed among almost every caste and in very nearly every district of the city. In twelve weeks there were 447 deaths. The total number of deaths from this disease in that year was 1854, which comprised of 859 Hindus of other caste, 454 Mussulmans, 167 Parsees, 8 Europeans &c.

Cholera.

Dr. T. S. Weir, Health Officer, wrote to the Municipal Commissioner on the 8th January 1889, to the following effect:—"I regret to inform you that there has been a severe outbreak of cholera at Ghorupdeo, in the locality and in some of the buildings in which an outbreak occurred while the description of Ghorupdeo at page 356 of the last Annual Report was being printed. There has also been an outbreak of cholera at Bhorebhat, where a previous outbreak occurred in the last year, the condition of the drainage of Bhorebhat being imperfect, open drains leading to cesspools. It is suggestive that there should now occur, as occurred in the past year, a number of cases of cholera in these two localities."

**Total deaths from Cholera in Bombay  
from the year 1849.**

<b>Years.</b>	<b>No. of deaths.</b>	<b>Years.</b>	<b>No. of deaths.</b>
1849	2,269	1875	847
1850	4,729	1876	378
1851	4,020	1877	2,550
1852	1,185	1878	1,183
1853	1,139	1879	824
1854	8,358	1880	80
1855	1,789	1881	546
1856	2,151	1882	192
1857	1,741	1883	1,027
1858	105	1884	576
1859	2,265	1885	598
1860	1,687	1886	19
1861	1,251	1887	269
1862	2,684	1888	379
1863	2,742	1889	462
1864	4,588	1890	102
1865	2,537	1891	164
1866	882	1892	169
1867	111	1893	147
1868	227	1894	426
1869	754	1895	261
1870	886	1896	490
1871	268	1897	1,265
1872	190	1898	104
1873	95	1899	111
1874	20		

A report from the Health Officer on the effect of Mr. Haffkine's Anti Choleraic inoculations at Calcutta will be found on the proceedings of the Corporation of 14th August 1899.

Anti Choleraic  
inoculation at  
Calcutta.

Some interesting accounts of the Famine of 1877 is recounted by Dr. Weir in his Annual Report for that year. The discussion that ensued indicated the view the public took of the then crisis and it also throws some light on the misery which the refugees were reduced to.

The Famine  
of 1877.

Col. Hancock said :—“It appears from Sir Frank Souter's report that there are nearly fourteen thousand able bodied persons come into Bombay, out of which 5269 are employed on different works. There are 8177 unemployed and homeless, all of whom are in want, some



in extreme want and in need of our assistance. It appears that the majority have come from the Collectorates of Sholapore, Poona and Sattara. Why they came here it is difficult to say. Some doubtless came in search of work at better wages than they can get in their own districts. Others came in the hope of being able to subsist without doing any work at all. Most of them must have been able bodied when they started or they would not have had strength to undertake the journey. But it is a fact that ought to be remembered that at the time they left their districts there was work for them on the relief works. They made a mistake in coming here, and the result is we have such pictures in the reports of abject misery, wretchedness, starvation and distress as I venture to say are unparalleled throughout the length and breadth of the famine districts where relief has been undertaken. Therefore I say it is clear that in coming to Bombay they made the greatest possible mistake. They have arrived exhausted and with what means they had also exhausted before they got to their journey's end, and they arrived here stricken with fever. However the matter we have to deal with is not why they came here, or whence they came, but what to do with them now that they are here. I think there can be no question whatever that it is the bounden duty of the municipality to assist them in every possible way. Probably there never were so many public works going on in Bombay since the days of the reclamation. It is for those who are able and willing to work to be brought to them. There is the Malabar Hill Reservoir, the Princes Dock, the Vehar outlet, and the Tulsi Reservoir. All these are now going on, as well as some great work on the G. I. P. Railway.

The chances are that able bodied men would find little difficulty in getting work and therefore our efforts should be directed to the relief of the 8,000 unemployed adults. I think it is evident from what we have heard to-day from the Health Officer and from Mr. Raghunath Narayan Khote, that it is not possible to deal with them by house to house visitation. They are overcrowded to a degree, and there is, we are told, no hospital accommodation. We should get them outside the town; on the flats or elsewhere. There we should get them in sheds.

with a hospital attached and with proper people to look after them, to see to their feeding and cure them of their fever. Having made this unfortunate mistake of having come down here and starving on the way, what we must do is to get them on their legs again."

Mr. Maclean said "He thought it was a very probable statement of the reason why they came to Bombay, that they deemed Bombay a splendid place, having heard vague accounts of fellow villagers coming here and obtaining employment, and thought they could all do likewise. The gentlemen he had before referred to ascribed the great mortality amongst them, not to the influences of famine but simply to their terribly overcrowded state. He said—"the scenes I saw were loathsome and awful. Decency was impossible. Men, women and children, the sick and the healthy—all lay together. There was not a breath of fresh air possible to be got; the whole atmosphere was a stench of men and women and expiring oil butties."

Dr. Blaney observed—"I thought I would come to this discussion to day to take a part in it, having devoted some time to ascertain what is the real condition of things. In going through the city I have had to use Inspectors of the Health Department to show me some of the worst places, and I could hardly have believed there was so much misery and disease existing here. But speaking from a medical point of view, it is a fact that the fever that prevails is in these large houses which are so much overcrowded. Where there is any ventilation the number seems comparatively small. In one place I counted 42 persons all in a high burning fever. I saw a great number, too, in a low fever, and the overcrowding everywhere was fearful. I have no doubt that the chief cause of all, is overcrowding at this season of the year. That there is lots of evidence of the effects of famine, I do not doubt. There is the high shoulder bone in both sexes, the prominent ribs and emaciated form. The great question for this Council is: here we have an evil, and what is our duty in regard to it. Our duty, is I think, to see that the healthy state of the City does not suffer from this overcrowding and the disease consequent upon it. Now, you can do very little by feeding. In going round

the houses I was astonished to find that there were whole Maharatta families who refused gratuities. They would rather suffer starvation than accept them. A great number of those who are sick are overcrowded and have no medical help. There is no doubt in my mind that if you segregate these people and give them free sun light, good ventilation and some medicine a great many lives will be saved. I saw in one room only eighteen inches high—yes, I repeat, only eighteen inches high—with a sloping ceiling to four feet only, with the tiles burning upon my head, there were two or three individuals stricken down with fever. I believe that the chief thing is to cure them of their fever. Now in the situation in which they are placed, overcrowded and ill ventilated, no medical treatment would be effective. There are lots of places where the grain is brought to them from the Relief Committee, but there is no body to grind it, and nobody to cook it. In the generality of such cases poor neighbours come in to cook it, and grind it for them. But I think that dry bajree cake and no medicine and being in a stifling room can only end in one thing—mortality; and I think with all feelings of humanity we ought to endorse Col. Hancock's proposal and adopt some means by which lives will be preserved, and we shall so preserve the health of the city."

On the 4th April 1877, the Corporation sanctioned a grant of Rs. 10,000 for the formation of sanitary camps.

Some of the speeches made on this occasion give a good idea of the crisis.

Mr. Grattan Geary said "I was on Sion Road last Sunday evening week, and I saw a group of people coming to Bombay in a most lamentable state. Had Dr. Blaney been with me, he would have been able to say whether they were then suffering from fever or not, but it seemed to me that they were suffering from illness; they were not clear in their heads, they were staggering as they walked, and it seemed to me, judging from what I had seen in a house to house visitation in the city, that they were labouring under the same kind of fever I saw there.

"It is satisfactory to know that this immigration is not continuing but I am greatly afraid there is reason to believe it may be resumed, and I quite agree with Mr. Maclean that it will never do to have anything like the

**Poor Law system of relief in Bombay.** We must clearly distinguish between those suffering from famine and those suffering from sickness consequent on the famine. We have the fourteen thousand people here from the Deccan in a deplorable state. Some few thousand have obtained work which they can hardly perform, but by far the larger number need help. Government has taken upon itself the duty of preserving life. I think they might go a little further than taking steps for "preventing death and severe suffering which are the official words used."

The erection of lines of sheds some thirty or forty feet apart on the open "Flats" was at once commenced. They were constructed of the lightest and cheapest material procurable, the walls of bamboo mat, the roofing, of the leaves of the date palm. Lying under mat screens stretched over bamboo poles, the sick had sufficient covering to protect them from the dew but scarcely against the sun, and they were well exposed to the bracing influence of the invigorating sea breeze.

The camp was ready for its tenants on Good Friday, and the Police assisted by the officer's of the Health Department began to collect and take to it destitute, sick and hungry paupers from all quarters of the City. It was observed with astonishment the self respect, the piteous resignation of men and women sinking through the last stages of destitution; families were seen starving because they would not beg nor ask for alms, but we were wholly unprepared for the utter abhorrence with which the removal of the sick and the helpless was regarded. The sick were concealed, the destitute hid themselves, we were thwarted and opposed in all our efforts; the detestation of our doings expressed itself in a strike amongst thousands—some say ten thousand—labourers, the castemen and brethren in religion of those whom a great benevolence was trying to succour. The evil reputation of the hospital, appears to have been due to a combination of causes. The fear of entering a hospital, strong in the poorer classes of this city, is much intensified amongst the labourers born out of the Presidency town. Having a natural aversion to enter an Hospital, they began to view the refuge camp with abhorrence when they

found there was a possibility of their being taken to it forcibly and kept there against their wishes: of the camp itself horrible stories were circulated: almost underneath the ground on which it stood were hidden the bones of the cattle who died from rinderpest, and on either side were the great burying grounds of the city; to the simple but superstitious Hindu Peasant, thermometer and Stethoscope were but instruments of sorcery, the watchfulness and attention, the manipulations of the medical attendants, the squeezing and tapping of their bodies, the minute inquiries, the earnest gazing into their faces and more especially at their tongues and the constant plying of pencil and note book in their presence excited in them a great wonder and amazement; they knew that in a certain room some of their number were taken, that here some of their blood extracted was mysteriously treated; rude people little accustomed to meet with kindly acts found themselves the object of an unceasing kindness and attention which to them was utterly unintelligible. Those who were well enough saw food and medicine given to the sick by christian hands; they saw christian hands dipped into their rice and milk and a horrible suspicion pervaded their minds, which soon began to be rumoured about and circulated through their countrymen outside that the Hospital was a temple in which if they were not sacrificed on the altar of scientific enquiry they were certain to be deprived of their caste and religion. These I believe to have been the causes, either combined or singly, which led to this curious demonstration for Bombay—a strike of the labourers on the harbour foreshore. From this time no one was taken to the hospital by force. Those who wished to go were assisted there. The indignation of the Maharattas was appeased.

Here are a few extracts from the "*Bombay Gazette*" narrative of a house on Nowroji Hill.

"On reaching the second floor I found myself in another passage of the same description as the one beneath, that is, crowded with people and opening into a number of airless, sunless dens called rooms. There women and children were packed together, some lying on the floor groaning or coughing badly, and some sitting up looking vacantly before them, their chin on their hands

and their elbows on their knees. A brown earthenware saucer, containing a small reddish light spluttering among oil, cast a strange glare throughout the place. Some of the doors in the passage were opened, when our presence became known, and a large number of people crushed into it. Some were old men leaning upon long staves, some haggard old women crying aloud that they and their families were hungry and had fever, and here and there between the principal figures appeared naked children."

This is what one of the inmates related of himself:—"Another old man (Tajeebhoy) volunteered his story. He had come from the Sholapur district with his mother (who was now lying at his feet stricken down with fever,) his wife and two children. They were all sick except one boy. For eight days past he and his family had been nearly starved. He would have died, if he had not gone into the big roads of Bombay and got a few pies by begging. He did not wait in Sholapore to see whether the Sircar could do anything for him or not. He left at once because he thought he would get good wages in Bombay. Many people left with him at the same time and he could not say why they had all left before waiting to see whether they could get food or employment from *Government*." Over 100 people lived in this house, and literally "pigged" in the passages, or in the rooms, which were quite as bad as passages. I looked into one room. Ten people were lying on the earthen floor, several of them groaning with fever. As I was proceeding down the rickety staircase an old man cried after me. He wanted to know what I had done for his case? He then said his name was Bhow, that at the Dewallee he had come from Karmalla in Hyderabad territory, that he had walked all the way to Bombay together with his wife and four children. Poor Bhow had travelled as far as Tannah with ten bullocks and a mare—all his possessions. There he was compelled to leave six bullocks with a man who promised to look after them and feed them for 3 Rupees a month. He then journeyed on to Bombay with the remaining bullocks and the mare. The former he managed to sell for Rs. 10 or Rs. 12 each, and for the mare which was probably no fatter than Bhow's purse, when she

arrived in Bombay, he could not get more than Rs. 5. All his family had fallen sick with fever in Bombay and he had now spent all his money. The central passage was filled with people, many of whom were lying groaning on the mud floor. By the dim buttees of the place I could see anxious faces peeping through the half ajar doors. Here again I could see no window. Day and night each den must be dark, unventilated and unwholesome. The heat was almost intolerable.

The *Times of India* sent a special Commissioner, Mr. Curwen to report on the immigration. Here is an extract from it:—"Immigration from the famine district is so great now, and so steady, that unless the attention of the Government and the public be immediately called to the subject, the health of our City must suffer to an extent of which recent death rates, varying from 70 to 80 per 1,000, afford only a faint suggestion. On Wednesday the 23rd instant, no less than 1248 immigrants entered the City, of these about one-half came on foot. And this is not an exceptional day's record for probably each day this week will average as many as 1,200. When we consider that these people are so thoroughly exhausted from travel and starvation that not more than from three to four per cent. can be described as capable of able bodied labour; that there is no demand whatever for extra labour here; that many are already suffering from famine fever, and that nearly all are ripe for disease, we are compelled to foresee an epidemic, in which the great loss of life cannot be confined to the immigrants. We speak plainly; not as alarmists, but merely to urge the necessity of checking this dangerous movement by some means or other. We speak unselfishly without any thought of this or that famine policy, but simply in the interest of Bombay citizens. These unfortunate people are vagrant paupers to a degree undreamt of in England, and they must either be treated as paupers are treated here *i. e.* sent back to their Original Zillas, or Government must arm the officials with summary powers to seize them all as they come in—whether on foot, by rail, or by sea—and deport them to some large relief camp to be established well outside the limits of the City. One thing is certain, Bombay already contains more of these unfortunate people than is consistent with the health of the Town, and the



number is already so large as to render the efforts of private charity almost useless. In order that the public may realize what this daily inroad of 1,200 famine stricken people really means, we despatched one of our staff to spend the whole of Thursday in examining the people entering by Sion Causeway. His letter, though monotonous, will not, we think be found without interest, nor even without a sort of suggestive instruction.

"We encountered the first distinct evidence of the famine immigration movement as we passed the tank at Parell, beyond Government House, in the shape of a party of fifteen, who had walked from Phultan in the Zilla of Satara. Eight of these were children, two of whom might have been described as at the breast but that their mothers had no milk. They had been 15 days on the road, living on charity, and had been compelled to leave three of the party, who were too ill to walk further, at Tannah. They came to Bombay to look for food. We passed at intervals three stragglers from the famine districts, but rather to our astonishment, after what we had heard of the crowded state of the road found it almost deserted. When we reached the Causeway, the mystery was explained. The Police had stopped all the famine immigrants who came in after 7 the previous night and gathered them into a compound, and there they lay huddled together 178 in all.

"They complained most bitterly of the want of water for there is no main here and the only water to be had for drinking was the filthy water in the tank. We cross examined the people with some patience and care, but their stories were almost precisely similar to those we shall narrate hereafter. One party of four, weavers by trade, had come all the way from Mhow, because there was no work for weavers. In all this batch there was only one Mahomedan, though his caste is not so stated in the official list appended. From Vurgaum, close to Poona, came a party of 23 Mahars who had been sent away. Another party of 15 said they had taken 15 days coming from Poona. But we soon found that all the people had not the faintest possible idea of either time or distance. This failing I have noticed elsewhere among famine travellers. They also to a man maintained either,

that their application for relief work had been refused, or that they knew nothing at all of relief works. From 15th to the 21st instant inclusive 2,831 people from the famine districts have entered Bombay by the Sion Causeway. This means an average for the week of 400 per diem. But the numbers are increasing. On the 22nd 500 were booked, and on the 21st 637.

"From 10 a.m. to 2-30 p.m. they continued to pour over the bridge at the rate of 60 an hour, and any one of our readers who want to see the realities of a famine—without going to the districts—have only to spend an hour or two at midday at Sion Causeway. They all bore that indescribable famine look in their faces, which enables any one to distinguish them at once from the people round Bombay. So far as we saw they were not a score in all fit for able and remunerative work, and we only noticed six professional beggars. The others were patient to lethargy; and though one of our party gave a trifle now and then to the hungriest looking, none of the others pressed forward to beg. The children seemed to have suffered the most and were unnaturally pot bellied, with wasted little legs and large knees; but the men apparently have suffered more than the women. A medical man who was present ascertained by repeated enquiry that none of the nursing mothers had any milk for their little ones—indeed there were hardly any children under six months old—he also expressed an opinion that none of the women out of the crowd of nearly six hundred people we saw were pregnant. Very few indeed, perhaps 18 or 20 in all, had silver ornaments; and the great bulk of the travellers had parted with their cooking pots."

In regard to the famine of 1899-1900 the Corporation on the motion of Dr. Viegas resolved to request the President to draw the attention of Government to the unsatisfactory nature of the arrangements made at Thana, for the detention of famine-stricken immigrants deported from the city to the relief works there, and that as a large number of the immigrants deported there had returned and were returning to the city, to request that Government would be pleased to adopt proper steps for the prevention of their coming back to Bombay.

## A VILLAGE AFFECTED BY GUINEA WORM.

After the introduction of the Vehar water into Bombay, it was thought that Guinea Worms had disappeared from the City but in his Annual Report for 1881, Dr. Weir the Health Officer makes the following remarks :—

“ The former notoriety of Matunga for guinea worm has been recalled to memory this year in the experience of one village, and unhappily only one village, by name Gowaree. This village has been dreadfully afflicted by this scourge ; the villages on either side have been unafflicted. Gowaree draws its supply of drinking water from a well of muddy surface water about a mile to the East of the village ; the villages on either side are supplied with Vehar Water. Gowaree has been smitten, the villages on either side have been exempt. The sanitary condition of Gowaree is the same (except in water supply) as the villages on either side ; the most probable source of infection is the well water used by Gowaree Villagers. The villagers have begged for Vehar water. I inspected the village more than once ; the condition of the people was pitiable ; there are some 40 houses and some 297 inhabitants ; of the 297 inhabitants 89 were suffering from guinea worm, and of the 40 houses people were suffering in most of the houses—a most distressing spectacle : one young woman with a child had 16 manifestations of filaria. These people were poor, their suffering increased the difficulties of life. The experience of this village recalls to mind descriptions of the condition of life from a sanitary point of view in years gone past in Matunga.”

## JIGGERS.

Writing about Jiggers Dr. Weir states :—“ Jiggers not hitherto known in Bombay, were imported. I find the accounts of observers in South America do not quite correspond with the descriptions in the text books. The proper name of the disease is, I believe, *chigoe*, and the flea burrows between the cuticle and true skin, not only of human beings but of animals. The *pulex penetrans*, to give the flea its right name, is about one twenty-fifth of an inch in length. It is popularly stated to burrow in order to lay its eggs, but the fact appears to be that the female burrows to die, except the abdominal section, which continues to feed the germs that afterwards become the eggs. It is different to the common flea, and has a sort of proboscis at its anal extremity.”

On 7th April 1899 the Health Officer wrote to the Physician in charge Goculdas Tejpal Hospital, requesting information as to the cases of Jigger admitted into the Hospital, and received the following reply :—" I have the honour to inform you that " 12 men were sent to this Hospital on the 14th ultimo by the " Port Health Officer, who reported them to be suffering from " Jigger ulcer. I have no personal knowledge of these cases, " but Lieut.-Col. W. G. Hume Henderson, I.M.S., Surgeon, " to the Goculdas Tejpal Hospital, reported on these cases as " follows :—

' Their illness would have been better described as the proba-  
' ble result of irritation owing to the entrance of the female  
' *pulex penetrans* and its consequent ovulation. A large  
' percentage of the men were suffering from very extensive  
' unhealthy ulcers which, if they were caused by Jigger at  
' all, must have been caused by its entrance weeks or months  
' ago. I made a careful examination of all the cases, and  
' in only one could I detect anything resembling the irrita-  
' tion caused by the recent entrance of the flea, and in this  
' case nothing resembling the distended abdomen of the  
' insect was detected.' " Out of the 12 cases, 10 have been  
discharged from Hospital and 2 are remaining.

Return of births (Males and Females) in the  
City from 1866 to 1899.

Years.	Males.	Females.	Total.	Years.	Males.	Females.	Total.
1866	3,326	2,578	5,904	1884	7,634	7,003	14,637
1867	2,671	2,444	5,115	1885	7,762	7,202	14,964
1868	1,938	1,606	3,544	1886	7,772	7,137	14,909
1869	1,912	1,576	3,488	1887	7,992	7,437	15,429
1870	1,735	1,405	3,140	1888	8,669	8,091	16,760
1871	2,992	2,745	5,737	1889	8,064	7,429	15,493
1872	6,894	6,241	13,135	1890	7,965	7,603	15,568
1873	6,655	6,067	12,722	1891	7,964	7,554	15,518
1874	6,608	6,227	12,835	1892	8,045	7,440	15,485
1875	6,894	6,497	13,391	1893	7,875	7,343	15,218
1876	7,020	6,605	13,625	1894	7,828	7,230	15,058
1877	7,195	6,622	13,817	1895	8,150	7,534	15,684
1878	7,339	6,699	14,038	1896	8,267	7,623	15,890
1879	7,736	6,823	14,559	1897	4,903	4,433	9,336
1880	9,388	7,859	17,247	1898	5,640	5,144	10,784
1881	8,675	7,963	16,638	1899	5,661	4,963	10,624
1882	7,945	7,421	15,366				
1883	7,902	7,280	15,182				

Return showing the percentage of the mortality amongst  
Europeans, Parsees &c., during a series of years.

YEARS.	Europeans.	Parsees.	Brahmins.	Mussalmans.
1863 .....	36.72	18.96	.....	.....
1864 .....	42.90	19.99	.....	.....
1865 .....	57.27	21.50	.....	.....
1866 .....	29.82	16.58	.....	.....
1867 .....	25.67	17.07	.....	.....
1868 .....	82.20	19.16	.....	.....
1869 .....	29.35	18.82	.....	.....
1870 .....	26.26	17.90	.....	.....
1871 .....	31.25	20.04	.....	.....
1872 .....	29.22	28.44	.....	.....
1873 .....	24.54	21.97	.....	.....
1874 .....	25.21	22.31	.....	.....
1875 .....	32.53	24.08	.....	.....
1876 .....	24.67	23.74	.....	.....
1877 .....	30.03	23.04	29.93	45.26
1878 .....	31.98	24.99	31.83	49.12
1879 .....	24.84	20.45	27.99	41.57
1880 .....	26.88	20.14	27.60	37.44
1881 .....	22.77	20.10	19.05	31.05
1882 .....	17.70	18.43	21.02	29.87
1883 .....	19.94	22.96	23.06	34.53
1884 .....	19.23	22.86	22.32	33.27
1885 .....	19.23	20.43	24.69	32.02
1886 .....	17.89	21.42	20.71	30.57
1887 .....	17.22	20.47	20.85	31.74
1888 .....	19.04	22.67	23.62	32.69
1889 .....	20.66	22.88	24.93	35.20
1890 .....	18.56	21.11	22.27	32.98
1891 .....	18.60	23.28	23.66	38.23
1892 .....	20.10	23.78	27.77	41.25
1893 .....	18.68	22.27	23.56	37.23
1894 .....	20.37	21.80	24.93	42.10
1895 .....	20.81	22.94	25.72	39.30
1896 .....	19.39	28.10	32.22	53.01
1897 .....	18.77	32.61	38.72	72.77
1898 .....	17.89	39.13	46.70	72.60
1899 .....	16.47	34.89	45.52	73.21

## MALTA FEVER.

During the year 1899-1900, the prevalence in many parts of the town of an indefinite type of fever was noticed. Col. Weir was of opinion that the fever exhibited symptoms of the type known as "Malta Fever" and this view was supported by the opinion of several local practitioners, under whose observation many of the cases came. The type of fever was different to that usually prevalent in Bombay, the duration of the fever was prolonged, there was great pain in the body, and the attack was not amenable to the usual treatment.

Statement showing the births and deaths in Bombay,  
deaths from fevers, and also the rainfall.

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YEAR.	Total births.	Total deaths.	Rainfall.	Total deaths from fever.
1848	.....	10,051	78.51	4,859
1849	.....	12,828	114.91	5,566
1850	.....	15,187	50.88	5,555
1851	.....	15,950	96.09	4,808
1852	.....	14,022	69.26	5,918
1853	.....	18,647	62.48	6,219
1854	.....	17,541	82.13	8,219
1855	.....	14,862	41.80	6,923
1856	.....	14,761	65.98	7,281
1857	.....	17,826	51.18	7,857
1858	.....	14,342	61.45	7,508
1859	.....	14,249	77.51	7,016
1860	.....	14,409	61.60	6,226
1861	.....	15,014	75.51	6,847
1862	.....	15,809	74.00	6,979
1863	.....	18,696	77.23	9,078
1864	.....	25,015	45.96	12,598
1865	.....	28,531	79.01	18,767
1866	5,904	16,865	79.34	9,870
1867	5,515	15,500	65.48	5,674
1868	3,544	15,702	63.77	5,481
1869	3,488	17,713	91.66	5,108
1870	3,140	14,888	66.21	4,745
1871	5,337	16,064	40.56	6,341
1872	13,135	18,990	76.48	7,512
1873	12,722	15,665	69.70	6,156
1874	12,835	15,496	82.18	5,408
1875	13,391	18,734	83.09	5,244
1876	13,626	20,783	50.04	5,867
1877	13,886	33,511	69.89	12,832
1878	14,088	26,999	118.90	9,944
1879	14,559	22,527	61.40	8,445
1880	17,247	21,146	67.94	7,513
1881	16,688	21,856	73.04	6,437
1882	15,366	20,468	69.23	5,453
1883	15,182	23,530	90.18	5,908
1884	14,637	22,542	62.19	6,830
1885	14,964	21,850	67.91	6,648
1886	14,909	20,074	93.74	5,820
1887	8,428	20,513	94.95	5,612
1888	16,760	22,421	55.97	6,642
1889	15,493	23,378	67.84	7,266
1890	15,568	20,534	65.18	6,489
1891	15,518	23,847	77.17	6,837
1892	15,485	26,518	95.12	7,751
1893	15,218	23,142	67.24	5,844
1894	15,058	27,330	66.85	6,458
1895	15,684	25,081	67.59	6,404
1896	15,890	33,451	87.65	8,776
1897	9,836	47,896	81.53	6,951
1898	10,784	51,961	74.09	4,114
1899	10,624	56,434	35.90	



### **MUNICIPAL FREE DISPENSARIES.**

In addition to the Municipal Dispensary, which was opened in November 1898, in Kumbārwada, another was opened on the 22nd of January 1899, at Dongri. These two free dispensaries have been very largely attended by the poor.

## THE PLAGUE.

The first official intimation of the presence of plague in Bombay reached the Municipal Commissioner on the 23rd September 1896. In August of that year cases of fever with glandular swellings had been attended by certain Doctors; other suspicious cases had been noticed, and a death was actually registered on the 31st of that month as due to bubonic fever. The difficulty of accurately diagnosing this multiform disease was very great; many suspicious cases were put down as diphtheria, the resemblance to enteric often made the differential diagnosis exceedingly difficult in the absence of bacteriological examination; and even bacteriological examination not infrequently proved abortive in clear cases of plague. The disease in its more infectious type was generally pneumonic and devoid of glandular enlargements or was wont to take the form of high fever with slight cough. Doctors often differed in their opinions about cases, and no clearer illustration of the difficulties of diagnosis can be given than the fact that at the latest stages of the epidemic, numbers of cases had to be segregated—and that by Medical Officers—not because the patients had plague, but because they had suspicious symptoms.

Official intimation of Plague.

The mean annual temperature of 1896 was the second highest on the record in the last 51 years. The total fall of rain amounted to 87·65 inches, being 15 inches above the average. But the distribution of the rainfall was abnormal, for, instead of being distributed over four months, it was distributed over a much shorter period—a little over six weeks—and, instead of being succeeded by the great atmospheric disturbance designated "Elephantas," the monsoon currents ceased in less than two months, and the thunder storm as announcing the end of the rainy season, was absent. The rainfall in June 1896, was 28 inches or 8 inches above the average, and the rainfall in July of that year was 36·4 inches or 11·7 inches over the average. In August the rainfall amounted to 20·8 inches giving an excess of 7½ inches over the average. The rainfall, therefore, was abnormal in its duration. The sanitary effects of

Phenomena that preceded the Epidemic.

the annual rainfall on the public health were as marked as the aberrations of the rainfall on agriculture. The heavy rainfall in 1896, flooded with sewage the low lying portions of the city, through which the polluted streams rushed in swirling currents, leaving banks of mud and sludge behind to ferment or slowly dry ; and moreover, the sewage flowed from the sewers on to the streets after each heavy downpour and rushed up the traps and flowed on to the low lying ground.

In July and August 1896, the humidity was higher than in the corresponding months of the three preceding years, viz :—

	1893	1894	1895	1896
July	·84	·86	·85	·87
August	·84	·84	·85	·86

In December of that year the humidity, notwithstanding the early and abnormal cessation of the monsoon and the higher temperature of the Autumn, was higher.

A gradual rise in the barometer in October, November and December was registered as under.

	Barometer mean range.		Barometer mean range.
August ...	... ·076	January	... ·118
September ...	... ·098	February	... ·119
October ...	... ·111	March	... ·121
November ...	... ·111	April ...	... ·119
December ...	... ·116	May ...	... ·098

Maximum  
temperature  
1891 to 1897.

The maximum temperature from 1891 to June 1897 was as under.

Months.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
January ...	87·1	88·1	85·0	84·3	81·6	85·1	89·0
February ...	88·2	86·4	84·2	86·3	90·1	83·6	81·4
March ...	84·9	89·0	86·3	88·3	72·5	88·0	84·0
April ...	89·1	91·4	91·7	89·3	90·9	92·6	91·1
May ...	89·4	93·0	89·6	89·7	90·1	91·7	91·2
June ...	90·7	88·7	89·4	90·4	91·5	91·0	91·3
July ...	86·6	88·7	85·4	87·0	87·0	86·4	
August ...	84·4	84·3	84·4	84·7	84·4	89·3	
September ...	85·0	84·3	84·4	83·6	86·7	89·2	
October ...	90·4	88·6	88·0	87·3	92·2	91·4	
November ...	89·9	86·9	89·0	88·4	88·8	91·9	
December ...	87·2	85·8	85·4	86·4	86·5	87·2	

The extraordinary flooding due to excessive monsoon was thus described by the *Times of India*. "The oldest inhabitant does not remember such unprecedented fall of rain as that which has deluged the country during the past few days."

Extraordinary flooding during the monsoon.

All traffic to the island was interrupted for five days or so. The grain lay in the wet. The low lying portions of Bombay were under water. Swirling currents rushed down the streets and flowed by the buildings to the low lying places under water. At the most distant points on the Esplanade, near the head of the drainage system, water welled up through the manholes. The subsoil water welled up where it had never been seen before. Wells over flowed that had never been full before.

The following was the abnormal Phenomena.

Abnormal Phenomena.

1. An abnormal season of rainfall that lasted only half the normal period.
2. An abnormally high level of sewage after heavy rain in the arterial sewers in the City.
3. Wet grain in dark damp godowns or granaries underneath human dwellings.
4. And further a balance of some five million gallons of water a day left in the soil—the difference between the water coming into the City and the sewerage going out—a balance indicating great danger at all times.

The first public announcement of this disease was by Dr. A. G. Viegas, a member of the Standing Committee and the Municipal Corporation, in September 1896. Public alarm was aroused after the expression of opinion by Dr. Viegas that the disease was true bubonic plague. An early case was seen by Dr. Ranina in August 1896, in Bhandup street. The patient was unconscious when first seen; temperature 103. According to the history given by friends of the patient, fever had suddenly come on without any premonitory symptoms. There was great pain in the left hip which led to the discovery of two large glands. Drs. E. F and C. F. Underwood had before this treated some suspicious cases with œdema over the glands of the neck.

Bubonic Plague notified.

An Early Plague case.

The difficulties of diagnosing some cases of plague are well described in a paper read by Dr. Hojel at a meeting of the Bombay Medical and Physiological Society on May 7th.

Difficulties of diagnosing some cases.

He writes :—"To day, I should like to read the notes of several cases which I have come across, which I may call (for want of a better term) 'the Abdominal type of plague'. These cases too, perhaps, account for some of the increased mortality from remittent fever in the past 9 months. In their early stages these cases bear a very strong resemblance to enteric fever, and the differential diagnosis is extremely difficult. I speak now purely from a clinical point of view as regards symptoms and signs, for bacteriological Laboratories and apparatus are not scattered broad cast about India, besides which it is a fact that in many cases cultures made from the blood of plague patients prove sterile. It is all important, therefore, that one should be able to recognise such cases both for the good of the community and one's own reputation".

Dr. Lenmann made autopsies on five of the cases treated in the European General Hospital, and Dr. Hojel writes on them as under :—

"Clinically speaking, the preliminary stages of all these cases, as was the fact with all those of which I have notes, were all in favour of their being enteric fever, with the exception, perhaps, that in the presence of an epidemic, such as we have had with us, all cases were viewed with more or less suspicion until they were proved to be otherwise than plague cases. The differential diagnosis in these early stages is, to my mind, extremely difficult, and the importance of early diagnosis is apparent to all."

The first  
cases.

The first cases reported to the Health Officer, seemed from the description of the symptoms given by the friends, to be cases of diphtheria.

Distressing  
type of dis-  
case.

Six cases, two of them of a very distressing type, were found in Mazagon. They were a group of cases in one family, that had been brought into Bombay from Thana. One of the family, a child, had died in the train on the way to Bombay, from Bubonic plague. Three of the cases had glandular enlargements around the neck. One of these cases, a female, had enormous œdema of the neck extending down below the clavicles on to the chest and into the axillæ. There was great pressure on the trachea and gasping respiration. There was another case with enlargement over the parotid and submaxillary glands. This was a milder case. Undoubtedly the cases were of plague and yet bacteriologically the results of examinations obtained by two different observers were negative. Professor Bitter, who saw the cases, had no doubt as to the type of the disease, and that it was bubonic plague.

The following case treated in the Parel Hospital is of great interest, showing as it does, the varying forms of the disease and how difficult those forms may at times be of recognition. Dr. Thomson writes :—

Varying  
forms.

"The German Scientific Plague Commission experts found plague bacilli on three different days in the blood cultures, and the day before death and at the *post mortem* not a single plague bacillus could be demonstrated in the blood of any of the organs. Their conviction was that the patient died from the severe complication, and had his vitality been greater and no complication supervened, he would certainly not have died of plague, all the bacilli being destroyed."

A very curious case was sent from Dongri to Grant Road Hospital; some medical men present had doubts about the case. The case was of a boy suffering from mycetoma of the foot. He had no indications of bubonic plague, except a peculiar look about the face and a peculiar tongue covered with a white fur. The case was kept under observation. The Russian Scientific Mission made a culture from the foot and obtained plague bacilli. This case afterwards developed an abscess in the liver.

It was not an unusual thing to see dead people lying on the streets, and in many cases people whilst walking along the roads fell down dead. It was also not unusual for a person to die within a few hours of being attacked.

Dead people  
in the Streets.

On 1st October 1896, information was received of rats dying in Dongri. Over this district generally rats died in the last week of September of that year.

Rats, Pigeons  
and cats.

From the time bubonic plague had established itself in Mandvi at the end of September 1896, large numbers of rats were seen running about the streets and coming out of house connection pipes and drains in a sickly or dying condition. Many of them had buboes actually developed on the neck and groin. Bacteriological examination was carried on by the various specialists present in Bombay on numerous specimens and the plague bacillus was freely detected. It was thus clearly proved in Bombay from the outset, as has invariably been the case, in other places that the disease attacks human beings and rodents. Those acquainted with the life, history and characteristics of the rat tribe are aware, of their extremely clannish habits. In almost every quarter of the city where the bubonic plague appeared in force it was preceded by the

presence of dying rats in considerable numbers. This condition was noticed both in the houses, open streets and gardens. In addition to this a regular migration of rats speedily manifested itself; its course was generally speaking from east to west and thence up the sides and centre of the Island due north. Minor migrations also took place in the south of the city, and that on Malabar Hill was especially noticeable.

The bubonic plague travelled principally from east to west and then north, throwing out branches to the south and obtaining a footing on Malabar Hill later on. By the commencement of December nearly all the rats had disappeared from Mandvi and adjacent quarters of the city, while they were noticed in Kamathipura, Tardeo, and Byculla in great numbers, many of them being found dead. The bubonic plague followed in their track with unerring regularity.

The migration of rats on Malabar Hill was of later occurrence, as the plague did not get a firm hold there till the commencement of 1897. Many rodents were observed dead or dying in the houses along the Walkeshwar, Pedder and Nepean Sea Roads and subsequently on the ridge of the hill just before the disease broke out in force. By the middle of March not a rat was to be seen or heard on Malabar Hill and yet in ordinary times they infect the whole locality and are constantly appearing or making their presence known.

On the 9th November 1896, 5 dead pigeons were found in Surat Street and on the evening of the same day nine more were found. Three days later 5 more were found.

A large number of dead and sick cats were observed in January 1897. Some of the sick cats were examined bacteriologically, but the results were sterile. On the 25th of that month, Dr. Jennings wrote: "I have observed a large number of dead and sick cats about, and am of opinion that these animals are being affected with some disease of the nature of the plague."

A cat was found suffering from a disease that appeared to be bubonic plague with enlarged glands on both sides of the neck.

The general treatment of houses embraced the thorough cleansing and disinfection of every room where a case occurred; all *moris*, *nahanis* and traps connected with the



building were carefully disinfected. Dry chloride of lime or carbolic acid powder was sprinkled over the floors and passages, not only of the affected houses, but also of the neighbouring ones. The building, inside and out, as well as the gullies, was thoroughly flushed, the roof opened, and all obstructions to light and air removed. The house connections were overhauled all rubbish such as rags, old clothes &c., of which there were enormous quantities, and all infected articles of small worth, were burnt, anything of value being thoroughly disinfected, while the premises were limewashed from end to end before reoccupation.

The conditions of the grain godowns on the Port Trust estate attracted early attention, as it was found that numerous cases of plague were occurring in the dwelling rooms above them. In every instance where a case of plague was known to have occurred above a godown, the place was closed for 20 days, the grain and other merchandise were taken out and exposed to the sun, sulphur was freely burnt inside and outside the building, and the godowns themselves thoroughly flushed and disinfected. Similarly in the case of shops, when a case occurred, no goods were allowed to be sold till they had been exposed to the sun for at least a day. The shops were not allowed to be used till they had been shut up and completely fumigated for 3 days and even then had to be lime washed before they were allowed to be reoccupied.

The grain  
godown shops.

Systematic flushing and disinfection was carried out in the gullies, courtyards, and drains. Wherever the approach of plague was feared, disinfectants were distributed to the people with instructions how to use them. Special sanitary precautions were enjoined upon the managers of mills, schools and other large concerns. While the grave yards were carefully watched with a view to the rigorous enforcement of the regulations. Ambulance carts were provided and health camp erected in the city.

On the 6th October 1896, the Municipal Commissioner issued the following notification :—“ Whereas a dangerous disease namely Bubonic plague has broken out in certain parts of the city of Bombay and the Municipal Commissioner is of opinion that the ordinary provisions of the city of Bombay Municipal Act 1888, or of any other laws

Plague notification of the  
Municipal  
Commissioner

in force in Bombay are insufficient for the purpose of effectually preventing the spread of such disease, Public notice is hereby given that, with the sanction of the Government, and pursuant to the provisions of section 434 of the said Act, the Commissioner hereby prescribes the following temporary regulations to be observed by the public and all persons concerned. And farther that the Commissioner will if necessary, take special measures as are hereby indicated for carrying into effect the objects of the said regulations :—

1. In extension of the provisions of sections 422, 425 and 427 of the said Act, it is hereby prescribed that every person having the control or charge of any building, or part of a building shall, on demand by the Commissioner or any officer to whom the powers, duties or functions of the Commissioner under those sections may have been or may be delegated, immediately cause such building or part of a building to be opened, and shall permit the Commissioner or any such officer as aforesaid to cleanse and disinfect the same, to cause the removal for disinfection or destruction of any grain, bedding, or clothing, or of any other goods or articles found therein. For the purpose of carrying into effect the object aforesaid, the Commissioner or any such officer as aforesaid will, whenever he shall deem it necessary so to do break open and forcibly enter any such building or part of a building and, without previous notice to the owner or occupier thereof, will cleanse and disinfect the same, and direct or cause the forcible removal and disinfection or destruction of any grain, bedding, clothing, goods, or articles as aforesaid.

2. In extension of the provisions of section 424 of the said act, it is hereby prescribed that any person suffering from bubonic fever, wheresoever found and whether provided with proper lodging or accommodation or not or whether lodged in a building occupied by more than one family or not, shall, on a certificate signed by the Executive Health Officer or by any duly qualified medical practitioner that such person is suffering from the said disease, be liable to be removed to any hospital or place at which patients suffering from the said disease are received for medical treatment. For the purpose of carrying into effect the objects of this regulation, the Commis-

sioner or any officer to whom the powers, duties, or functions of the Commissioner under section 424 have been or may be delegated, or any police officer empowered by the Commissioner in this behalf, will, whenever he shall deem it necessary, so to do, cause any person in respect of whom such certificate as aforesaid has been made to be removed to any such hospital or place as aforesaid.

3. Every house in which any case of the aforesaid disease exists or has existed shall, for so long as the Commissioner shall deem necessary, be isolated in accordance with such orders as the Commissioner may in each case prescribe, and every occupant of such house and other person who may be therein or who may resort or desire to obtain access thereto, shall obey any order which he may receive from the Commissioner or any Municipal or Police Officer empowered by the Commissioner in that behalf, prohibiting ingress to or egress from such house. For the purpose of carrying into effect the objects of this regulation, the Commissioner or any such Municipal or Police Officer as aforesaid will, if necessary, forcibly prevent persons from entering or leaving such house."

This notification was received with loud denunciations, and answered by petitions protesting against its terms, and many classes of the population announced that they would leave the City and did so. It was stated that the hospitals were places of torture and places intended to provide material for experiments. The Officers of the Health Department were charged with a brutal pleasure in dragging the sick from their homes and in killing them.

As people in a panic flying from danger unknown, so some in mad panic fled; they knew not whither.

On the 20th October, 500 mill hands assembled on the road outside the Arthur Road Hospital and threatened to wreck the building and carry off the patients. On the 29th of that month some 900 or 1,000 mill hands collected and rushed into the compound of the Hospital and threw stones at the building. Even some of the patients were struck by the missiles, and all were greatly terrified. The news of the disturbance was at once telephoned to the Police who promptly appeared on the scene. In this disturbance one of the ambulance vans was smashed, and the roof of the hospital damaged.

Public excitement and alarm.

Attack on the Arthur Road Hospital.

The second  
notification.

The position becoming one of grave alarm, the Municipal Commissioner issued the following notification on 30th October 1896.

"Whereas the Municipal Commissioner is informed that great alarm has been caused to the public by the notification recently issued under section 484 of the Municipal Act, and whereas the objects of that notification have been misunderstood, inasmuch as the powers under it were obtained principally to meet the case of a large increase of bubonic plague. The public are now hereby informed that no cases, where segregation and treatment can be carried out on the premises, will be removed to the Arthur Road Hospital, and in such cases as require removal no action will be taken except upon the certificate of a qualified medical practitioner employed by the Health Department. The Executive Health Officer has been instructed accordingly, and the Commissioner of Police informed."

On the 11th December 1896, a Committee composed of members of different communities, was formed.

The Committee issued the following notice :—

How to  
avoid Plague.

"At a meeting of several influential citizens held on the 11th December 1896, the gentlemen whose names are given below, representing the different communities of this City, were appointed to form a Committee to consider, amongst other things, the steps best calculated to prevent the spread of the plague and to recommend to the people at large the precautionary measures to be adopted to avoid the disease. The Committee have been able, with the assistance of the best expert opinion, to prepare the following rules which embody recommendations which should be carefully observed, and, in order that these rules may be widely known to the public, the Committee have decided to publish and circulate them in different languages in the form of handbills over their signatures. The Committee hope that it will be clearly understood that the instructions and recommendations contained in the following rules emanate from the Committee. The names of the members of the Committee will, it is to be hoped, be a sufficient guarantee to the different communities of this City that the recommendations made are to the best interests of the people themselves and of the health of the City. In view of the present dangerous state of public health, the necessity of keeping houses in the town, and specially those in crowded parts, clean and free from bad smells, and of following the instructions conveyed in the rules, cannot be too great—

ly impressed upon the people. Light and air ought to be allowed to enter houses freely, and wherever the means of ventilation are not sufficient it is extremely desirable that steps should be taken to provide better ventilation, so that sun light and fresh air may enter the rooms. The Committee earnestly hope that the advice given by them, coming as it does from the representative men of the different communities, will be cheerfully adopted and acted upon."

BHALCHANDRA KRISHNA	} Honorary Secretaries.
BHATAWADEKAR.	
K. N. KABRAJI.	
ISMAL JAN MAHOMED.	
O. V. MULLER.	
A. P. MODY.	
N. N. KATRAK.	

In the rules the Committee gave excellent advice. They urged the people to inform the Municipality of all cases, and to leave infected houses. The danger of wet or damp places inside dwellings was pointed out. They advised the people to be careful of abrasions or sores, and dwelt on the necessity of burning all articles that had come in contact with the sick.

The epidemic, continued to increase and coupled with the operations in progress, was productive of widespread alarm. The people refused all medical aid and would not listen to any advice. Many began to leave the city. While the panic was at its height and the exodus in full flow, the scenes at the railway stations were striking—a large crowd of natives of every caste and creed pressing and shouting for tickets. As special after special left the stations, the relics of the disappointed crowd sooner than miss the next opportunity would quietly settle down to sleep on the platforms. The busy scenes at the several stations stood out in marked contrast to the quietness of Bombay; whole streets of shops were closed, business was paralysed and the desolate emptiness of thoroughfares, ordinarily teeming with life, was most remarkable and continued throughout the months of December 1896 and January 1897, when the population had been reduced to its lowest figure.

Exodus from  
the city.

In September 1896, the number of plague deaths was only 79 while in the next month it rose to 313, and in the month following to 273. Then with an extraordinary virulence it rose to 1271 in December and to 2108 in

The viru-  
lence of the  
disease.

January 1897. In February of that year it was 3241, in March it dropped to 2448 and in April to 1268. Then it started declining; in May it was 368, in June 43. The proportion of attacks to death was 86·94 per cent.

Immunity  
from the dis-  
ease.

The Europeans were almost immune, only one death from plague having occurred among them upto the end of 1896. Eurasians and Mussulmans enjoyed the greatest security, in this year, after Europeans. The Jains and Lingaets suffered most severely; other classes and races were more or less evenly afflicted.

Visit of H.  
E. the Go-  
vernor to some  
of the houses  
in Peru Lane.

The following description of the insanitary buildings in Peru Lane is of interest, but more especially as some of the houses had been inspected by H. E. Lord Sandhurst in 1896. His Excellency went through the lane late at night with Dr. Weir, the Health Officer, and one of the places he inspected by the light of a weaver's dim lamp—a few cotton threads of cotton in oil lying on a plate—was a building without any means of ventilation except the front doors and a little space on the side of each privy and having holes on the ground floor in which poor weavers sat when they worked. Except from an open space near the privies and the front door not one of them had any other means of air and light. The buildings were occupied by a poor class of Mussulman.

Description  
of insanitary  
dwellings.

The description proceeds. "I have completed a thorough inspection of all the houses in Peru Lane with a view to action being taken to their being either condemned or rendered more suitable for human habitation.

"Houses 9 to 11. Rooms on ground floor have no means of obtaining sufficient air and light.

"Houses 27 to 33. Most of the rooms are pitch dark and have no means of obtaining light and air. The staircase is dark and narrow and the waste water pipe runs within the house". \*

Government  
notification re-  
garding Rail-  
way Inspec-  
tion.

On 10 February 1897, Government issued the following notification in regard to the inspection of Railway traffic:—

1. "Every train coming from the direction of Bombay to any of the stations to which these rules may be declared by Government to be applicable shall be stopped at such station and shall not be taken further until the inspection provided by these rules has been carried out, and until the guard in charge of such train has obtained

\* For a full description see the plague report for 1896 pages 108-9.

a certificate from the Chief Medical Officer in charge of the inspecting staff to the effect that all persons proceeding further by the said train, whether railway servants or passengers, are free from bubonic plague.

2. "Every such train shall be emptied for inspection of the passengers in such manner as the Chief Medical Officer on duty may direct, and all such facilities shall be afforded by the servants of the Railway Company as the Chief Medical Officer on duty may deem to be necessary for the purpose of inspecting.

(a) "Persons who have come by such train, whether they intend to proceed by it or not, and

(b) "Persons who intend to start from any of the said stations and to travel by such train.

"In particular the doors of all railway carriages shall be locked at the station at which the train last stops before arrival at the station appointed for the inspection of passengers under these rules.

3. "The Governor in Council may appoint any person or persons by name or by virtue of office, to be the Inspecting Medical Officer or Officers for the purpose of these rules, and may cancel any such appointment.

4. "Inspecting Medical Officers appointed under these rules are empowered to examine all persons arriving by or intending to leave by the trains mentioned, and to detain persons suffering or suspected by them to be suffering from bubonic plague in such places as may be appointed for the accommodation of such persons respectively.

5. "The Police shall act under the orders given by the Chief Medical Officer on duty under these rules with regard to compelling persons to submit to such regulations as may be made or approved by the said officer for the purpose of inspection and with regard to the detention and segregation of persons suffering or suspected to be suffering from bubonic plague.

6. "Disobedience to any orders issued under the above rules Nos. 1,2,3, 4 and 5 will subject the offender to a prosecution under section 188 Indian Penal Code."

The inspection of all passengers leaving Bombay by sea commenced on the 6th February 1897, and the inspection of the inward sea traffic commenced on the 12th April

Inspection of  
persons leaving  
by sea.



1897, but from the beginning all passengers for Europe, &c., were examined. The native crafts were examined at three different anchorages, and the steamers were examined at the wharves. Passengers, who came from Colaba were kept for 5 days under observation, and passengers from Kutch Mandvi were detained for 8 days, as bubonic plague was prevalent, at both these ports.

#### Hospitals.

For Europeans, St. George's Hospital was opened to admit cases. In Mandvi and Bhuleshwar private hospitals were opened for Hindu patients. Then there was the Jain the Parsi, and the Mussulman Hospitals. Other hospitals and health camps were provided in different parts of the city.

#### Government notification of measures to prevent the spread of Bubonic Plague.

On 10th February 1897, Government issued a notification, empowering the Municipal Commissioner to take measures to prevent the spread of Bubonic plague. The notification specified the measures in regard to :—

- (1) Dealing with buildings unfit for human habitation.
- (2) Overcrowding of buildings so as to endanger health.
- (3) Vacation of buildings for cleansing or disinfection.
- (4) Deserted or locked up buildings.
- (5) Power of dealing with buildings and articles found therein.
- (6) Cleansing and disinfection, which included the removal of earth or soil of floors and the whole or part of the roofs of buildings.
- (7) Compensation for damage caused by destruction or disinfection.
- (8) Cutting off of water connections inside buildings where injury to health was apprehended, and provision of other means of water supply outside such buildings.
- (9) Demolition of buildings unfit for human habitation and procedure to be followed in ascertaining value and the compensation to be paid to owners.

#### Curious suggestions. Patent medicines &c.

In the beginning people were more confident of cure. One man wrote stating that he had a cure not only for plague, but for hydrophobia, murrain, pneumonia, and anthrax. Many suggestions were received, some of which were very curious. One wrote : "Remove the nasty

sewers, and, to be sure, the plague will disappear." He also asked that the Chairman of the Corporation should be informed of the advice he had given. A person wrote stating that he had "means by virtue of which he could relieve the public of the so fiercely prevalent disease in the City of Bombay in the course of 16 days."

Another wrote: "The chief cause of the plague is, in my humble opinion, as well as in the opinions of the people in general, that bad drainage, and chiefly the smell enters the house which has no remedy in the hands of the people to put a stop to, is the cause of the plague."

The burning of horse manure was suggested as a remedy. Many people objected to sulphur—the "nasty sulphur" as it was called. Others were very business like. One wrote: "I beg to request what reward and pay I shall get if the preparation is shown by me." Some were very modest and would commence in this way. "In time of need, advice is indeed acceptable from many sources," but as they went on, they became more confident, and would guarantee that the weekly death rate of the city would be reduced by more than one half, and they would often say that they were the inventor of a patent specific that warranted to cure every malady. A *Hakim* undertook to root out the disease. He also wrote: "If God helps me in curing the plague cases, what a great blessing will be to your honour." One man offered to supply a cure on advantageous rates. Another guaranteed to stamp the plague out in 25 days. A seller of medicine asked the Health Officer to try his patent medicine. He stated that the plague microbes were killed immediately, and to do so, all that was necessary was to "fill up the system, with Ague Mixture." This well meaning seller of patent medicines lived in a district where bubonic plague did not come for some time. At last it came close to his house and he ran away and left his fever mixture behind—the wisest thing he could have done. Another guaranteed to cure every case in 4 hours. Some of these charlatans affected much grief and one wrote: "that not being able to bear the sight of so many dying every day, I beg leave to make my remedy known to you." Some of these remedies consisted in applying medicines to the conjunctiva.

From Europe, one unknown, telegraphed that a certain preventive was the excellent and old remedy, of salt and water.

Among other remedies suggested was a pill made of pigeon's dung. One person sent a specific called the "Fume-destroying Elephant like disease." One of the plague destroyers certifies his powder to have marvellous qualities. This is the form of disinfecting powder—"Odorous, and when burnt, the smoke is potent enough to check the plague by destroying all the germs of the dire disease."

At their meeting held on 8th March 1897, the Corporation considered the following :—

MALABAR POINT, 5th March, 1897.

Appointment  
of a Com-  
mittee by  
Government.

Dear Mr. President,—My Government are about to issue a Notification under the Epidemic Diseases Act, appointing an Executive Committee to carry out, under the orders of Government all the measures within the city of Bombay that we consider necessary to check and prevent the spread of the plague. It is my wish that there should be no misunderstanding of the reasons which have led to this course.

2. The epidemic has now been prevalent for more than five months ; since October last it has been severe ; during the past three months it has been so severe that the total number of deaths has been from three to four times the normal number ; and this without making any allowance for the large diminution that we know has taken place in the population of the city. Steps to check the spread of the disease have been taken ; the Municipal Commissioner and the servants of your Corporation have worked with an energy and a devotion to duty that have commanded our unstinted admiration. The cleansing and disinfecting of the City have been thorough. It is scarcely an exaggeration to say that the continued presence of the epidemic in Bombay to its present extent is conclusive proof that it cannot be kept in check by cleansing and disinfecting and all the other measures that have so far been relied on as sufficient. Other measures are needed. If we cannot summarily kill the plague, we can, I am advised and I believe, check its spread, reduce its strength, and limit and weaken it, till it will die a natural death. But we cannot do this unless we take larger and different measures from those we have hitherto adopted. And first of all it is impossible to deal with this disease unless we know where and to what extent it exists. We must, therefore, search for and discover it. This is merely a matter of enquiry, but the enquiry must be more widespread, more constant, and more systematic than heretofore. Next we must provide a sufficient number of hospitals, at convenient places with every

regard to religion and sex, for all who suffer from plague, and we must ensure the removal to them of all persons so suffering; we must treat them well and show that treatment in a hospital is the most humane and hopeful course that can be adopted. Those in charge of hospitals will be instructed that, as far as possible and practicable, they should be open to friends and relatives of the patients, who should be encouraged to come and see for themselves that the patients are well cared for. I am glad to find that private effort has already provided several hospitals; that is a good and wholesome sign. This is a time when the City needs every help and support that its citizens can give; it is the duty of each one of us, by example and persuasion, to demonstrate that treatment of plague patients in hospitals is essential to the welfare of the patient and to limit the possibilities of spreading the disease. It is a duty that I hope the members of the Corporation will take upon themselves earnestly and actively.

3. But the requirements of the case do not end with hospitals. If we are really to check this epidemic, to prevent it wandering wherever chance may take it, we must try to watch, in some way, all those who are in special danger of being attacked; those, for example, who have lived in the same room with, or in close attendance on, a plague patient. There is a danger that such persons may have contracted the disease. We must watch them, so that at the first indication of illness the patient may be brought under treatment. By this means we shall secure for him the best chance of recovery, and on behalf of others the least scope for infection.

4. Very briefly put, these are the measures on which I mainly rely for a successful fight against the plague. To carry them out most effectively, it is necessary to appoint a small Committee, not to consult and advise, but to work—a Committee that will divide the whole scheme of work, apportioning certain branches to each member. It is desirable to include in this body a Medical man and Engineer. But as the Committee is to be a working, not an advising, body, it must be as small as possible. We have come to the conclusion that what we need will be secured by a Committee of four, and, to form that Committee, we have selected General Gatacre as Chairman, Mr. Snow, the Municipal Commissioner, Dr. Dimmock, and Mr. James, one of the Engineers of the Corporation. They will be subordinate only to Government; this is essential, both because it is Government alone, by exercising the powers very recently conferred under the Epidemic Diseases Act, that can call the Committee into being and for another reason that I will now explain.

5. Unhappily this epidemic has spread beyond Bombay; it has attacked certain places in the Thana District and Poona severely, and reached to other places. As people move from infected

places to others, they may take the plague with them; its tendency is to spread. Our efforts required to be widespread, far-reaching, and systematic; they must, wherever they may be, be directed, controlled, and harmonized. We cannot have one practice pursued in Bombay and a materially different one elsewhere; our methods must be consistent and complete, and beyond everything we must, if possible, be successful before the rains.

6. So individual efforts, whether of Municipalities, of Local Boards or of local officers, must all be made systematic and co-operative, and this can only be done by Government; they must take the control absolutely into their own hands. To do this is no slur on local bodies; it is no blow to local self-government; it is simply an imperial necessity.

7. With the earnest hope that the necessity for the action of Government will be apparent to all and that the co-operation of all the citizens of Bombay may be secured,—I am &c.,

SANDHURST.

To COWASJI HORMUSJI, Esq.,

President of the Municipal Corporation of Bombay.

MALABAR POINT, 5th March 1897.

Dear General Gatacre,—It is desirable that I should supplement the Notification appointing your Committee by some definite written instructions as to the course of action you should take. The Notification empowers you to carry out the measures to be taken to suppress and prevent the spread of bubonic plague. These measures should comprise an organization for (1) the discovery of all cases of plague; (2) the treatment of all cases in hospitals; and (3) the gradual segregation, as far as possible, of the probably infected—that is, of those living in the same room with, or in close attendance on, a person who is found to have the plague. These are the objects to the attainment of which your energies should be directed. I am sure I need not do more than indicate that in all cases of obstinacy or misunderstanding on the part of those whom it is our endeavour to benefit, persuasion and gentleness should be used; that the privacy of women should be disturbed as little as possible and only by women; and that the caste and religious usages of the people should be treated with all consideration. It is essential that the hospitals should, as far as is possible and practicable, be open to the friends and relatives of the patients who should be, as far as possible, accommodated near them and encouraged to come and see for themselves that the patients are well cared for. Everything that can be done is to be done to avoid creating a feeling of distrust, and I hope that those employed under you will, by combining persuasion and explanation with firmness, avoid this evil. Every advantage also should be taken of the

services of natives of influence. Many influential gentlemen of the various communities, most of whom are Justices of the Peace, have offered their services, and I have great confidence that the assistance they will render you will be really beneficial. In carrying out these measures, you will have at your disposal the whole staff already employed in plague operations in the City of Bombay. You are empowered to add to their number and to arrange and organize them in what you consider to be the most effective way.—Believe me, &c.,

SANDHURST.

*Notification.*

GENERAL DEPARTMENT.

No. 1204—702-P.

BOMBAY CASTLE, 5th March 1897.

In exercise of the power conferred by sub-section (1) of section 2 of the Epidemic Disease Act, 1897, and of the powers in this behalf conferred by the Governor-General in Council under section 2, sub-section (3), of the same Act, the Governor of Bombay in Council is pleased to direct as follows:—

Government  
Notification.

1. The following gentlemen are constituted a Committee for the purpose of carrying out under the orders of Government, the measures to be taken to suppress and prevent the spread of bubonic plague in the City of Bombay:—

- |   |            |
|---|------------|
| (1) Brigadier-General W. F. Gatacre, C.B., D.S.O., Chairman.                                  |            |
| (2) Mr. P.C.H. Snow, I.C.S. Barrister-at-Law,<br>Municipal Commissioner, Bombay Municipality. | } Members. |
| (3) Surgeon-Major H. P. Dimmock, M.R.C.S.,<br>L.R.C.P.  |            |
| (4) Mr. C.C. James, A.M.I.C.E.  |            |

2. The Committee are invested with all the powers conferred on or vested in the Municipal Commissioner for the City of Bombay by sections 422, 423, 424, 425, 426, 427 and 429 of the City of Bombay Municipal Act, 1888, and by the notification of the Municipal Commissioner, dated the 6th October 1896, and by the notification No. 228-P. of the Governor of Bombay in Council, dated the 10th February 1897, and the Committee are empowered to take any of the measures authorized by the said sections and notifications.

3. The Municipal Corporation of the City of Bombay and all the officers and servants of the Corporation and all public servants and all persons employed by the Committee shall carry into effect without delay any measures which may be ordered by the Committee.

4. All expenses incurred in carrying out such measures shall, in the first instance, be paid out of the municipal fund of the City of Bombay, but the Municipal Commissioner or the Corporation may recover from any person any amount which such person would under similar circumstances be liable to pay to the Municipal Commissioner or the Corporation under the City of Bombay Municipal Act, 1888.

5. On the requisition of the Committee, the Commissioner of Police shall give such assistance as may be necessary in order to enforce immediate compliance with any order of the Committee.

By order of H. E. the Right Hon'ble the Governor in Council  
J. DEC. ATKINS, Secretary to Government.

Proposed by Dr. K. N. Bahadurji, M. D., seconded by Rao Bahadur Dhakji Kashinathji—

"That the consideration of letter from H. E. the Governor to the President, dated 5th instant, be postponed until the meeting on Thursday, the 11th instant."

*Amendment* proposed by George Cotton, Esq., seconded by Badrudin bin Abdula Kur, Esq.—

Corporation  
Resolution on  
Government  
reference re:  
appointment of  
Plague Com-  
mittee.

(1) "That the President be requested to convey to H. E. the Governor the sincere thanks of the Corporation for the courteous assurances contained in his letter. (2) That the Corporation, without discussing the necessity of appointing the Sanitary Commission, for objects which could have been carried out without such intervention, will cordially co-operate and give all such assistance as may be necessary to carry out the measures adopted by the Commission. (3) That, though the Corporation consider that the language employed in section 3 of Government notification is not consistent with the constitutional position and functions of the Corporation, they will content themselves in the present grave crisis by putting on record their objection to such language, especially as they are persuaded that nothing further is meant than to require their assistance as is done in section 5 with regard to the Commissioner of Police, who is a direct servant of Government."

*Rider* to the motion proposed by the Hon'ble Mr. Abdalla M. Dharamsi, seconded by K. M. Shroff, Esq.—

"That in the meantime, and as a matter of urgency, the Corporation approve of the expenditure of such sums of money as may be applied for by the Municipal Commissioner on behalf of the Special Committee appointed by Government to the debit of the special grants already sanctioned for the suppression of the plague.

"That the following Committee be appointed to consider and report on the letter:—Mr. Cotton, Mr. Roughton, Dr. Bhalchandra K. Bhatawadekar, the Hon'ble Mr. Nowrosjee Wadia, Dr. Bahadurji, and the Hon'ble Abdalla M. Dharamsi."