

(1) Number of Pages.....46
(2) Date of repair.....14-11-66
(3) Initials of the Referencer.....S. J. S.

MADRAS RECORD OFFICE

GOVERNMENT OF MADRAS

Revenue

DEPARTMENT

G.O. No.
B.P. No.

908

Press
Mis.

Dated 21-7-1874 196

Not to be folded or roughly handled

No. 173. Read the following Proceedings of the Board of Revenue, dated 27th February 1874, No. 439 :—

Read report, dated 20th June 1873, by Dr. J. J. L. RATTON, on the manufacture of Salt in South Canara.

THE Board proceed to review Dr. Ratton's second report, in which he details the results of his examination of the salt manufactories in South Canara.

2. The manufacture is carried on only near Kundapur in the north of that district. The brine-supply appears to be everything that could be desired as long as the manufacture lasts; but the construction of the pans is in every respect most faulty, and the result what might be expected, viz., a salt which, in its qualities, chemical and physical, is about the worst manufactured in the Presidency.

3. The pans are described as excavated so as to be three feet below high water-level, and surrounded by rice and garden cultivation, so as to be hidden from view and unfit for salt-culture till the rice-crop is reaped. The reservoirs, condensers, and salt-beds, are all on the same level, and the advantages of facilities for natural irrigation from one to the other are thus lost. The soil is generally permeable, and no attempt is made to make the floors staunch; the leakage is thus enormous, the crop very small and too rapidly produced, and the salt is, therefore, light and flaky,—“such stuff,” says Dr. Ratton, “as would have been at once rejected at most stations on the East Coast.” It necessarily contains a considerable quantity of magnesian salts, though less than the Madras salt.

4. There appears to be no reason, but the contrary, why good salt should not be made at Kundapur as well as at many other places along the West Coast. If the levels and sizes of the condensers and crystallizing beds were properly arranged, and if they were properly puddled with good clay, which seems to be available, the expense would be repaid to the ryots a hundredfold. Mr. Ball should endeavour to induce them to make improvement in this direction, and should also consider whether it is not possible to exclude the drainage of the rice-fields from the pans. The Board think it very desirable that this officer should visit some of the East Coast factories after the close of the season on the West Coast. He would then find the manufacture in full progress, and would be able to see amongst other things the experiments which Dr. Ratton is about to commence.

5. In paragraphs 48 to 52, Dr. Ratton descants on the difficulty of inducing the salt ryots to abandon their system of manufacture for a better one, and suggests either an alteration of the law in the direction of compulsion, or else facilities be afforded for Europeans to enter into the manufacture. The Board have more faith than Dr. Ratton as to the possibility of influencing the manufacturers by example and precept, but would not object to see the experiment he suggests of grants of land to Europeans for the manufacture being tried at such places as Madras and Negapatam. Mr. Thomas' plan for the levy of the salt-revenue has been rejected as impracticable, but it is sufficient at present to reply to Dr. Ratton's recommendation of it that he bases his support on the supposed introduction of scientific salt-culture.

6. The cost of the manufacture is stated to be higher at Kundapur than on the East Coast. The attention of the Collector and Deputy-Collector is specially called to paragraph 60, in which the improvements necessary are summarily stated. Referring to paragraph 61, the Board will be prepared to sanction the supply of canoes for the Superintendents and Police of each division, in order to facilitate inspection.

7. Notwithstanding the inferior quality of the Kundapur salt, it is said to be preferred, at least for sale within the district, to the Bombay salt. The reason is stated to be its extreme lightness, which commends it to the merchants who buy by weight and sell by measure. Dr. Ratton returns to this point, in discussing swamp salt at paragraphs 111 *et seq.*, and, while objecting on what seem to the Board perfectly good grounds to the proposal that the heavy swamp salt should be sold by measure, the ordinary salt being still sold by weight, he suggests that it would be better to legalize the sale of salt by weight throughout the trade. By this he seems to mean the prohibition, by legislative enactment, of the sale of salt by measure. Such an enactment would be a dead letter, and the Board see no reason why, with open markets and free competition, the price *by measure* of the heavier salt should not become enhanced so as to conform in reality to the weight. If the traders could be forced to take the heavier salt, which they would certainly do if they got no other, they would very soon find it necessary to raise the price by measure so as to give themselves their old profit, or they might re-dissolve and re-crystallize the salt as suggested in paragraph 116. The necessary adjustment of price must be already made when, in South Arcot, the light salt of Gundalum meets the much heavier Merkanam salt, which gives 189,761 oz. to the measured garce. (Board's Proceedings, dated 5th March 1873, No. 318A). The effect would not be unfair to the consumer; the prejudice against the salt, which analysis shows to be unfounded, would shortly disappear; and the Government would profit by obtaining the salt at a less expense. To return, in any degree, to sale by measurement would be a retrograde step, and the Board would rather look to naturally produced differences of price, or to the effacement of the difference of quality by improvement of the manufactured salt as regards purity and uniformity of the standard. Meantime, the Board would have no hesitation in forcing on the market spontaneous salt of ascertained purity.

8. The attention of Deputy-Collectors should be directed especially to the deposits of so-called spontaneous or swamp salt. This salt may, it seems, be obtained in a state of great purity, either by collecting it before the evaporation has proceeded to dryness (the proper period can, with the aid of the hydrometer and Dr. Ratton's instructions, be easily ascertained), or, in certain circumstances, even when dry, where, as at Vedarneem, the character of the soil is such as to absorb the bitterness before the obnoxious magnesian salts are deposited.

9. In paragraphs 84 to 89, Dr. Ratton gives directions which should be studied by Deputy-Collectors for roughly ascertaining the quality of samples of salt. Paragraph 87 is somewhat obscure. The process described gives not the proportion of sodium chloride, but, as expressed by Dr. Ratton in paragraph 104, the proportion of real to apparent bulk.

10. The experiments described at paragraphs 135 to 146 are, the Board fear, too complicated to be carried out by ordinary Deputy-Collectors, and the results, unless obtained by observers who could be relied on, would be misleading and useless. It will be better that Dr. Ratton, in making his own experiments, should direct his attention to the points noted. He will doubtless be able to accumulate sufficient data. When he wrote, he was not aware that he would have ample opportunities of experimenting for himself. The mode of ascertaining the loss from leakage described at paragraph 143 is, however, simple and of great and immediate practical importance. Deputy-Collectors should make themselves familiar with it, and will find it of great value in enabling them to judge of the degree of preparedness of the salt-beds.

11. The report contains some useful remarks on the salt-supply of the West Coast. The Catch salt is the best and purest. This is not a spontaneous or swamp salt; it is made from brine-wells on the system which Dr. Ratton calls the "accretion system" (*vide* Mr. Pedder's report, paragraph 40); it is evaporated to dryness before the crop is gathered; and its singular freedom from magnesian salts must apparently be due to the brine-source being other than marine. Dr. Ratton classes the Bombay salt as next best, though the percentage of pure chloride is lower than in Madras salt. The Board are glad to note his decided opinion (paragraph 133) that, with improved manufacture, the Kundapur factories alone could be made to supply nearly all the salt the district requires and of first rate quality. The efforts of the Collector and his subordinates should be directed to this most desirable end. They are now made acquainted with the defects of the local manufacture and the remedies for them; and the Board trust that they will find means to bring about improvement. The Board do not desire that the ryots should be suddenly driven to change, but they would be prepared to sanction some outlay for the improvement of a set of pans, and probably the increased crops of better quality therein obtained would stimulate the other ryots to do the needful for their own pans. Differential rates of kudiavaram might perhaps produce a good effect. If so much is possible at Kundapur, the meteorological conditions farther south cannot be so different as to render salt manufacture impossible, and there are doubtless many excellent sites. In fact, salt is made at many places in the two districts. The question as to whether the manufacture is licit or not is not settled, as Dr. Ratton supposes (paragraph 129). The Proceedings quoted are still before Government. The Collector should endeavour, in the first place, to improve the Kundapur manufacture, and the Board will be ready to entertain proposals for experimental operations in other parts of the district. The Canara salt is already better than that of Goa, and there seems no reason why the latter salt should not be entirely superseded, at least for home consumption. The enormous saving which a development of the local manufacture on the West Coast would secure for Government is shown in paragraph 5 of Dr. Ratton's postscript.

12. The importation of salt for the West Coast supply will, however, be necessary for a considerable time, whether on account of Government or by private trade. The attention of the Collectors of Malabar and Canara is called to the superiority and greater cheapness (which the Board cannot quite understand) of the Catch salt, and they should endeavour to import it in preference to that of Bombay

13. It is no doubt highly desirable that the East Coast salt should be introduced, if possible, in Malabar and Canara, but the Board do not quite understand Dr. Ratton's proposal in the postscript to the report for the establishment of a depot at Erode. The West Coast imported salt does not now come as far east as Erode; and all that Dr. Ratton shows is that Government could put down salt at Erode from the East Coast for less than they now place Bombay salt at Beypore. But the establishment of inland depots is contrary to the policy of Government, and the East and West Coast salts must be left to find a line of demarcation determined by ordinary considerations of trade.

14. It is clear that, with carriage at 6 Pies per ton per mile, East Coast rail-borne salt cannot be economically introduced on the West Coast either on behalf of Government or by private trade, even though, under the operation of the new Act, the selling price on the West Coast be raised so as to include the freight from Bombay. The distance from Negapatam, the nearest point of supply, to Beypore is 331 miles, and, at 6 Pies per ton per mile, the cost of carriage would be Rupees 10-5-6 per ton, or 6 Annas 1 Pie per maund. The salt would, therefore, cost a trader buying it at the monopoly price at Negapatam Rupees 2-6-1 at Beypore without allowance for wastage in transit. But the selling price of Bombay salt, under the new Act, at Beypore would be, the duty Rupees 1-13-0 plus the prime cost and freight Rupees 0-7-3, or Rupees 2-4-3; and even allowing for an addition for establishment, etc., the advantage would be in favour of the Bombay salt. The advantage would evidently be still greater in other parts of Malabar and in Canara, for the selling price of Bombay salt at other points on the Coast would be no greater, and the Madras salt would be further burdened with the carriage from Beypore. So, also, in operations on account of Government. The Vedarioni salt costs Government at Negapatam Rupees 11-8-0 per garce, or Rupees 0-1-6 per maund, which added to Rupees 0-5-1, the cost of carriage, gives Rupees 0-7-7 against Rupees 0-7-3, the cost of Bombay salt. There would further be the expense of transit to other depots. Recent rates for Bombay salt are more favourable than those above given. If the cost of carriage were reduced to 5 Pies per ton per mile, the figures for a private trader would be Rupees 2-5-1 for Madras salt against Rupees 2-4-3 for Bombay salt, and for Government Rupees 0-6-7 against Rs. 0-7-3.

15. The proposal is apparently that Government should pay the carriage of the salt to Erode, and sell it there at Rupees 2 per maund. The effect would be that the salt might penetrate farther west; in fact, as far as Beypore, along the railway, and might place Bombay salt for a certain distance on each side; but a considerable portion of Salem, and probably the whole of Coimbatore, would gain the cost of carriage, and would have to be fully supplied at a heavy loss, before the salt could go farther west. The extent to which the displacement of Bombay salt would take place would determine the saving to Government, but the Board cannot estimate it. They doubt, however, whether it would cover the loss above referred to and the cost of the depot at Erode, which would be heavy; and at any rate the proposal is premature, since the resources of Negapatam have not been developed so as to supply salt in excess of the demand on the spot. It would not pay to sell at Erode any but the surplus which could not be sold at Negapatam.

16. Dr. Ratton now modifies his estimate of the cost at which salt may be made from Annas 10 Pies 9 per garce to Rupees 1-14-0. The Board leave his calculations to be tested by himself in practice, and the importance of the question cannot be over-rated. If salt can really be made in this Presidency at such a low cost, an important foreign trade might spring up, apart from the saving to Government by a possible reduction, or at least relief from increase, of the present kudi-varam rates. It will take a long time, however, to make any such improvement in manufacture, if possible, at all general; and the Board think it would be much to the advantage of Government if Dr. Ratton's services were placed permanently at the Board's disposal as Inspector of Salt Works and Reporter on Salt.

17. The attention of the Collectors of South Arcot and Chingleput is especially directed to paragraph 155. The loss there referred to fell upon the ryots, and every possible effort should be made to induce them to abandon a system of manufacture so full of risk. Paragraphs 126 and 157 show what improvement may be effected by attention to minor matters. Wherever possible, drying room should be allowed to the ryots on the platforms, and they should be encouraged and aided, if necessary, in the construction of small drying platforms in convenient situations amongst the pans. Improved drainage for removing flood-water might also be provided in many places at very trifling cost.

18. The Board thank Dr. Ratton for his interesting and useful report. Copies will be sent, as of the first report, to all Collectors of salt districts, and ten copies will be sent to Government to be forwarded to the Government of India, with reference to G. O., dated 17th May 1873, No. 499, Revenue Department.

No. 174.

ORDER THEREON, 21st July 1874, No. 908.

Separate Revenue, No. 11.
Salt.

His Excellency the Governor in Council has read Dr. Ratton's report on the manufacture of salt in South Canara with much interest, and approves generally

of the Board's views upon it as recorded in the foregoing Proceedings.

2. Dr. Ratton appears to have possessed himself of all or nearly all the necessary information required for the improvement of the salt manufacture throughout the Presidency, and it is now desirable that his inquiries and proceedings should be turned to some practical account.

3. There appears to be no reasonable doubt that salt of fair quality and in sufficient quantity for all local purposes may be manufactured at reasonable cost on the West Coast, and the earnest attention of Dr. Ratton and local officers should be turned to the all-important matter of developing the manufacture by every means in their power.

4. The Governor in Council believes that the salt-pans in Canara have been reclaimed from the back-waters, and thus their low level is accounted for. The ground in the vicinity up to the very verge being cultivated with rice and cocoanuts renders any other course difficult, if not impossible. Even with these conditions, however, there are materials for constructing good pans, and it is advisable that Dr. Ratton should early next season personally organize an efficient system both in Malabar and Canara.

5. The Deputy-Collector may, as proposed in paragraph 4, visit the manufactories on the East Coast, but as the time seems to have passed for this year the Board will

4

*Proceedings of the Madras Government, Revenue Department,
21st July 1874.*

arrange for his tour on a future occasion. The conditions of manufacture are so different that the delay will not be so detrimental as it otherwise might have been.

6. There is much truth in the observations contained in paragraph 46 of Dr. Ratten's report, and the only way in which the knowledge of scientific principles in conducting salt manufacture can be imparted to the officials for the purpose of improving the operations in their respective ranges seems to be to establish a model set of pans at Madras which the Deputy-Collectors might visit in turn, so that after personal instruction under Dr. Ratten's superintendence they might teach the process to the manufacturers. Had this been done, there would be valid grounds for the rejection of inferior salt, and eventually the price to be paid for the article might be made dependent on its quality. The Board of Revenue will be requested to suggest some definite arrangements for the purpose of giving effect to this suggestion.

7. The Government agree in the view taken by the Board in paragraph 5 of their Proceedings that interference by legislation with the process of manufacture is impossible with present information.

8. The facts which Dr. Ratten brings together in different parts of his report on the subject of measurement and weightment of salt are exceedingly interesting, but no change of the system under which all Government transactions are conducted by weightment can, for the present at least, be made, nor can the retail trade be interfered with by law.

9. There is in the Report much technical instruction on the physical condition of various kinds of salt and their impurities, which will prove more useful to departmental officers. Dr. Ratten's observations on the possibility of developing the trade in swamp salt in various parts of the country should receive the attention of the Board and Collectors. The experiments and observations suggested in the 135th and following paragraphs of his report should also be carried out, as far as practicable, by selected officers in communication with himself.

10. The Government approve generally of the instructions conveyed in paragraph 11 of the Board's Proceedings, and concur in the view taken by them on Dr. Ratten's suggestion for the introduction of salt from the East Coast into Malabar and Canara (pp. 13-15).

11. With reference to paragraph 156 of Dr. Ratten's report, any rule which hurries salt into store in a wet state should be cancelled, and arrangements should be made, as far as possible, at the various pans for its proper dryage as suggested.

12. His Excellency the Governor in Council is not prepared at present to ask the Government of India to place Dr. Ratten's services permanently at the disposal of the Board. Under existing arrangements, he will remain till the end of 1875, and by that time His Excellency hopes that practical results will show the advantages of his employment on this duty.

(True Extract)

(Signed) C. G. MASTER,

Acting Secretary to Government.

To the Board of Revenue,
the Military Department,
the Accountant-General,
the Inspector General of Indian Affairs Dept.

5. In paragraphs 48 to 52, Dr. Rutton descants on the difficulty of inducing the salt ryots to abandon their system of manufacture for a better one, and suggests either an alteration of the law in the direction of compulsion, or else that facilities be afforded for Europeans to enter into the manufacture. The Board have ~~more~~ faith than Dr. Rutton as to the possibility of influencing the manufacturers by example and precept, but would not object to see the experiment he suggests of grants of land to Europeans for the manufacture being tried at ~~such~~ places as Madras and Negapatam. Mr. Thomas' ~~plan~~ for the levy of the salt-revenue has been rejected as impracticable, but it is sufficient at present to reply to Dr. Rutton's recommendation of it that he bases his support on the supposed introduction of scientific salt culture.

Prigina

The above is a list of the names of the persons who have been
 elected to the office of the President of the Association for the
 year 1900. The names of the persons who have been elected to the
 office of the Secretary and the Treasurer are also given. The
 names of the persons who have been elected to the office of the
 Vice-President are also given. The names of the persons who
 have been elected to the office of the Executive Committee are
 also given. The names of the persons who have been elected to
 the office of the Board of Directors are also given. The names
 of the persons who have been elected to the office of the
 Board of Trustees are also given. The names of the persons
 who have been elected to the office of the Board of Managers
 are also given. The names of the persons who have been elected
 to the office of the Board of Directors are also given. The
 names of the persons who have been elected to the office of the
 Board of Trustees are also given. The names of the persons
 who have been elected to the office of the Board of Managers
 are also given.

Book No 18 L. 9, 174 100, 101
— 100, 101 175

6. The cost of the manufacture is stated to be higher at Kundapur than on the East Coast. The attention of the Collector and Deputy-Collector is specially called to paragraph 80, in which the improvements necessary are summarily stated. Referring to paragraph 61, the Board will be prepared to sanction the supply of canoes for the Superintendents and Police of each division, in order to facilitate inspection.

7. Notwithstanding the inferior quality of the Kundapur salt, it is said to be preferred, at least for sale within the district, to the Bombay salt. The reason is stated to be its extreme lightness, which commends it to the merchants who buy by weight and sell by measure. Dr. Ratton returns to this point, in discussing swamp salt at paragraphs 111 *et seq.*, and, while objecting on what seem to the Board perfectly good grounds to the proposal that the heavy swamp salt should be sold by measure, the ordinary salt being still sold by weight, he suggests that it would be better to legalize the sale of salt by weight throughout the trade. By this he seems to mean the prohibition, by legislative enactment, of the sale of salt by measure. Such an enactment would be a dead letter, and the Board see no reason why, with open markets and free competition, the price *by measure* of the heavier salt should not become enhanced so as to conform in reality to the weight. If the traders could be forced to take the heavier salt, which they would certainly do if they got no other, they would very soon find it necessary to raise the price by measure so as to give themselves their old profit, or they might re-dissolve and re-crystallize the salt as suggested in paragraph 110. The necessary adjustment of price must be already made when, in South Arcot, the light salt of Gundalum meets the much heavier Merkanam salt, which gives 189,761 oz. to the measured garce. (Board's Proceedings, dated 5th March 1873, No. 313A). The effect would not be unfair to the consumer; the prejudice against the salt, which analysis shows to be unfounded, would shortly disappear; and the Government would profit by obtaining the salt at a less expense. To return, in any degree, to sale by measurement would be a retrograde step, and the Board would rather look to naturally produced differences of prices, or to the effacement of the difference of quality by improvement of the manufactured salt as regards purity and uniformity of the standard. Meantime the Board would have no hesitation in forcing on the market spontaneous salt of unimpaired purity.

8. The attention of Deputy-Collectors should be directed especially to the deposits of so-called spontaneous or swamp salt. This salt may, it seems, be obtained in a state of great purity, either by collecting it before the evaporation has proceeded to dryness (the proper period can, with the aid of the hydrometer and Dr. Ratton's instructions, be easily ascertained), or, in certain circumstances, even on a dry, where, as at Vedarnim, the character of the soil is such as to absorb the water and the obnoxious magnesian salts are deposited.

9. In paragraphs 84 to 89, Dr. Ratton gives directions which should be studied by Deputy-Collectors for carefully ascertaining the quality of samples of salt. Paragraph 87 is somewhat obscure. The process described gives not the proportion of sodium chloride, but, as expressed by Dr. Ratton in paragraph 104, the proportion of real to apparent bulk.

10. The experiments described at paragraphs 135 to 146 are, the Board fear, too complicated to be carried out by ordinary Deputy-Collectors, and the results, unless obtained by observers who could be relied on, would be misleading and useless. It will be better that Dr. Ratton, in making his own experiments, should direct his attention to the points noted. He will doubtless be able to accumulate sufficient data. When he wrote, he was not aware that he would have ample opportunities of experimenting for himself. The mode of ascertaining the loss from leakage described at paragraph 143 is, however, simple and of great and immediate practical importance. Deputy-Collectors should make themselves familiar with it, and will find it of great value in enabling them to judge of the degree of preparedness of the salt-beds.

11. The report contains some useful remarks on the salt-supply of the West Coast. The Cutch salt is the best and purest. This is not a spontaneous or swamp salt; it is made from brine-wells on the system which Dr. Ratton calls the "accretion system" (*vide* Mr. Pedder's report, paragraph 40); it is evaporated to dryness before the crop is gathered; and its singular freedom from magnesian salts must apparently be due to the brine-source being other than marine. Dr. Ratton classes the Bombay salt as next best, though the percentage of pure chloride is lower than in Madras salt. The Board are glad to note his decided opinion (paragraph 133) that, with improved manufacture, the Kundapur factories alone could be made to supply nearly all the salt the district requires and of first rate quality. The efforts of the Collector and his subordinates should be directed to this most desirable end. They are now made acquainted with the defects of the local manufacture and the remedies for them; and the Board trust that they will find means to bring about improvement. The Board do not desire that the ryots should be suddenly driven to change, but they would be prepared to sanction some outlay for the improvement of a set of pans, and probably the increased crops of better quality therein obtained would stimulate the other ryots to do the needful for their own pans. Differential rates of kudivaram might perhaps produce a good effect. If so much is possible at Kundapur, the meteorological conditions farther south cannot be so different as to render salt manufacture impossible, and there are doubtless many excellent sites. In fact, salt is made at many places in the two districts. The question as to whether the manufacture is licit or not settled, as Dr. Ratton supposes (paragraph 123). The Proceedings quoted are still before Government. The Collector should endeavour, in the first place, to improve the Kundapur manufacture, and the Board will be ready to entertain proposals for experimental operations in other parts of the district. The Canara salt is already better than that of Goa, and there seems no reason why the latter salt should not be entirely superseded, at least for home consumption. The enormous saving which a development of the local manufacture on the West Coast would secure for Government is shown in paragraph 5 of 17. *Letter to the Government, 1873.*

12. The importation of salt for the West Coast supply will, however, be necessary for a considerable time, whether on account of Government or by private trade. The attention of the Collectors of Malabar and Canara is called to the superiority and greater cheapness (which the Board cannot quite understand) of Cutch salt, and they should endeavour to import it in preference to that of Bombay.

13. It is no doubt highly desirable that the East Coast salt should be introduced, if possible, in Malabar and Canara, but the Board do not quite understand Dr. Ratton's proposal in the postscript to the report for the establishment of a depot at Erode. The West Coast imported salt does not now come as far east as Erode; and all that Dr. Ratton shows is that Government could put down salt at Erode from the East Coast for less than they now place Bombay salt at Beypore. But the establishment of inland depots is contrary to the policy of Government, and the East and West Coast salts must be left to find a line of demarcation determined by ordinary considerations of trade.

14. It is clear that, with carriage at 6 Pies per ton per mile, East Coast rail-borne salt cannot be economically introduced on the West Coast either on behalf of Government or by private trade, even though, under the operation of the new Act, the selling price on the West Coast be raised so as to include the freight from Bombay. The distance from Negapatam, the nearest point of supply, to Beypore is 341 miles, and, at 6 Pies per ton per mile, the cost of carriage would be Rupees 10-5-6 per ton, or 6 Annas 1 Pie per maund. The salt would, therefore, cost a trader buying it at the monopoly price at Negapatam Rupees 2-6-1 at Beypore without allowance for wastage in transit. But the selling price of Bombay salt, under the new Act, at Beypore would be, the duty Rupees 1-13-0 plus the prime cost and freight Rupees 0-7-3, or Rupees 2-4-3; and even allowing for an addition for establishment, etc., the advantage would be in favour of the Bombay salt. The advantage would evidently be still greater in other parts of Malabar and in Canara, for the selling price of Bombay salt at other points on the Coast would be no greater, and the Madras salt would be further burthened with the carriage from Beypore. So, also, in operations on account of Government. The Vedaraniem salt costs Government at Negapatam Rupees 11-8-0 per garce, or Rupees 0-1-6 per maund, which added to Rupees 0-6-1, the cost of carriage, gives Rupees 0-7-7 against Rupees 0-7-3, the cost of Bombay salt. There would further be the expense of transit to other depots. Recent rates for Bombay salt are more favourable than those above given. If the cost of carriage were reduced to 5 Pies per ton per mile, the figures for a private trader would be Rupees 2-5-1 for Madras salt against Rupees 2-4-3 for Bombay salt, and for Government Rupees 0-6-7 against Rs. 0-7-3.

15. The proposal is apparently that Government should pay the carriage of the salt to Erode, and sell it there at Rupees 2 per maund. The effect would be that the salt might penetrate farther west; in fact, as far as Beypore, along the railway, and might displace Bombay salt for a certain distance on each side; but a considerable portion of Salem, and probably the whole of Coimbatore, would gain the cost of carriage, and would have to be fully supplied at a heavy loss, before the salt could go farther west. The extent to which the displacement of Bombay salt would determine the saving to Government, but the Board doubt, however, whether it would cover the loss above referred to and the cost of the depot at Erode which would be heavy; and at any rate the proposal is premature, since the resources of Negapatam have not been developed so as to supply salt in excess of the demand on the spot. It would not pay to sell at Erode any but the surplus which could not be sold at Negapatam.

16. Dr. Ratton now modifies his estimate of the cost at which salt may be made from Annas 10 Pies 9 per garce to Rupees 1-14-0. The Board leave his calculations to be tested by himself in practice, and the importance of the question cannot be over-rated. If salt can really be made in this Presidency at such a low cost, an important foreign trade might spring up; apart from the saving to Government by a possible reduction, or at least relief from increase, of the present kadi-varam rates. It will take a long time, however, to make any such improvement in manufacture, if possible, at all general, and the Board think it would be much to the advantage of Government if Dr. Ratton's services were placed permanently at the Board's disposal as Inspector of Salt Works and Reporter on Salt.

17. The attention of the Collectors of South Arcot and Chingleput is especially directed to paragraph 155. The loss there referred to fell upon the ryots, and every possible effort should be made to induce them to abandon a system of manufacture so full of risk. Paragraphs 156 and 157 show what improvement may be effected by attention to minor matters. Wherever possible, drying room should be allowed to the ryots on the platforms, and they should be encouraged and aided, if necessary, in the construction of small drying platforms in convenient situations amongst the pans. Improved drainage for removing flood-water might also be provided in many places at very trifling cost.

18. The Board thank Dr. Ratton for his interesting and useful report. Copies will be sent, as of the first report, to all Collectors of salt districts, and ten copies will be sent to Government to be forwarded to the Government of India, with reference to G. O., dated 17th May 1873, No. 499, Revenue Department.

(A true Extract.)

J. J. L. Ratton
Acting Sub-Secretary.

To the Secretary to Government, Revenue Department,
with 10 copies of Dr. Ratton's Report.

„ Dr. J. J. L. Ratton.

„ all Collectors of salt districts, with report.

„ all Salt Deputy-Collectors, with do.

Copy to all other Collectors, with do.

„ Inspector-General, Indian Medical Department, with do.

Ed. F. R. Bantleman.

I am positive the reason of it
never doubt it. The French
are very & in fact he believes
in the his salt - a little
he never forgets for it.

Para 15-18 Suggestion The Debit system has
been adopted
by him as being more
expedient

Para 16 Board's pro-
posal to appoint
a Patton permanent
in as inspection of
battalions and
regiments in the
West. The Post Office
have suggested the
continuance of the
employment of
a 2 years term of
service, the record
will be recorded
in the records of the
Post Office

of the

8th. latter officer, who has
 kept himself full of
 all the necessary information with a
 view to the improvement of foreign
 Salt Manufacturing and the extent
 is now required & that his experience
 & knowledge should be turned to some
 practical ^{account} use. I do not think
 we can ask the people of India to
 make his employment a permanent
 but we can have him for a short time.

proposals for the present to continue
his employment with a view to making
some practical arrangements in
order to improve the Manufacture.
I will approve generally of the Board
arriving at some proposed proceedings
in the subject, and I will then to
suggest some definite plan by which
Dr. Patton's method of manufacturing
salt might be taught, particularly in
connection with the time consumed in

its manufacture through the
President - such a plan, for instance,
as that suggested by Watson, which will be
conducted under the superintendence of
Dr. Patton himself - In the
execution the communication of Dr. No.
Reports to Deputy Collectors & have the
referred to in former Report? I will
direct their attention to the subject
and to the general character of the
changes required.

July 3/44.

I do not see
that there is much
to be gained by
the Government to allow
the Salt Lake
on for the Salt Lake
It is more than a
usual but full of
interest and of importance
of a kind that cannot
be better than in the
than has been done
The same is true of
which might be greatly
improved

There appears to be
a reasonable doubt
that Salt of good quality

and in sufficient
quantity for all local
purposes may be
manufactured at
reasonable cost on the
West Coast, and the
earnest attention of
Dr. Patton and the
West Indians should
be turned to the
all important matter
of developing the
manufacture by using
modern and powerful
The construction of
Salt Pans on the Coast
has not been done
because it has been
manufactured by the
Indians and the
the Government has
been collecting

to the very large quantities
and hence they have
not been able to
can be built with
that the Government
to be accepted and made
the most of. But matters
for constructing good
pans are at present
I think that Dr. Patton
must plan to build
next season and organize
an efficient system
both in Government and
the Deputy Minister should
visit the coast that far
but I repeat little more
before for many
years the construction
has differed with the
more built that will
into the Government Salt
Pan works are, and made
by Dr. Patton, more improved

From the Coleridge they
superior and that
at the time of 3/4 of a
century ago are still
where they were when
the British rule began
or perhaps a thousand
years before is not
a considerable time
administration

The constitution
left behind in Paris
might be affirmed to
conform to present
requirements insofar
by legislation with the
transformation of the
of all in the
constitution of people

The facts which
to R. M. have been
different parts of
the subject in the
subject

Subject of medicinal
and weighty of gold
and even differently
and cannot be stated
but of course no change
of the system under
which all government
operations are
conducted by the
can be thought of now
can be said to be
be interpreted with
by law the many
has in better manner
and improvement
Many Roads for
to R. M. Report for
to be taken up
it is not technical
construction with which
in the physical culture
of man. Kind of gold
and their importance
which will prove much
useful

...to Department
Officers. The Bureau
...the possibility of
developing the trade
in ... salt in
various parts of the
country (Para. 80) that
has drawn the attention
of the ...
The ... and
... should
... (Para. 80)
... also be consid-
ered as far as may be
...
...
...

The ...
...
...
...
...
...
...

... on Dr. R. ...
... about ...
... salt from
... into ...
... (188-10).

With reference to
Para. 106 I think that any
rule which hinders the
salt into storage ...
... should be
cancelled, and any
arrangement should
be made at the
various points for its
proper storage and
... by Dr. R.
I would order the ...

Dr. R. ...
...
...
...
...
...

I am only allude
to the ~~importance~~ of the
a ~~series~~ of ~~affairs~~ at the
head of the ~~year~~
of the ~~very~~ important
Department which
I used in my Minute
(a Member of the Board
of Revenue) & ~~22~~ ~~last~~ ~~year~~
that ~~Department~~ has
fully established the
absolute necessity of
creating for the employees
of such an office and
should remove the
uncertainty which
surrounds the matter
and make all clear
by it was recommended
to ~~the~~ ~~Government~~ ~~to~~
the ~~Government~~ ~~to~~
and ~~proceeding~~ ~~to~~
regulate ~~the~~ ~~matter~~

Proc of Govt: 15 July 1871 No 1229

direction of ~~the~~ ~~matter~~
and ~~cheap~~ ~~of~~ ~~the~~ ~~matter~~
and ~~administration~~ ~~the~~
importance of the matter
large revenue derived
from salt fully justify
the moderate increase
in cost of administration
even did the ~~Government~~
not wish to add
largely to the Revenue by
increasing the tax and
increasing efficiency
of manufacture

In ~~the~~ ~~matter~~ ~~of~~ ~~the~~
have, I ~~understand~~ ~~that~~ ~~the~~ ~~Government~~
understand ~~the~~ ~~matter~~ ~~of~~ ~~the~~
only changes into the
all ~~administration~~ ~~the~~
with the best effort and
papers before me
that ~~the~~ ~~matter~~ ~~of~~ ~~the~~
to be done by ~~the~~ ~~Government~~

will send him and
Constantine L. L. L.
Superior in Manuscript

I will ask the
Board to submit the
recommendations with
a piece of the revenue
for the appointment of

~~1876~~ M.

I am sure that
that I have not yet
known the true nature of
in a position to
ask the full of him.
There is no doubt
there is no doubt
They have been

his employment
up to the 1st of July 76.
and I think he
had to the last
with the same
I have to tell you
will be to be

It has been known
that the
salt water is
up to the 1st of July
his agricultural
is primitive &
defective. The
only way of
proving it is
to have the
the whole lot of
at the end of the
the "Salt and Water"

I shall be glad to
 learn the results of
 your visit to the
 factory and to see
 the business and how
 the salt is produced
 and its quality.
 I am
 Yours truly
 J. B. L.

Revenue Department

Proceedings of the Medical Commission

Under date the 27th July 1874.

Read the following Report
of the B. of Rev.

Reviewing Dr. Patton's
 report of results of examination
 of salt manufacture in S.
 Canada District and express-
 ing opinion that his services
 should be placed at the
 disposal of the B. of Rev.
 of Salt Works & Refineries in S.

HC 27th February 1874

J. B. L.
 16/7

His Excellency
 the Governor in Council
 has ^{read} ~~perused~~ Dr. Patton's
 Report on the manufacture
 of Salt in South
 Canada with much
 interest and approves
 generally of the Board's
 views upon it as recommended

in the foregoing Proceed-
ings.

2. Dr. Patton appears
to have proposed him-
self of all or nearly all
the necessary information
required for the improve-
ment of the Salt Manu-
facture throughout the
Presidency and it is
now desirable that his
enquiries and proceedings
should be turned to
some practical account.

3. There appears
to be no reasonable
doubt that salt of
good quality and in
sufficient quantity for
all local purposes may
be manufactured at
reasonable cost on the
West Coast and the
earnest

earnest attention of
Dr. Patton and the
Local Officers should
be turned to the all
important matter of
developing the manu-
facture by every means
in their power.

4. The Governor
in Council believes
that the salt pans
in Canara have been
reclaimed from the
backwater, ^{the} their low
level is accounted for.
The ground in the
vicinity up to the very
verge, being cultiva-
ted with rice and
cocoanuts render any
other course difficult
if not impossible con-
sistent with the conditions
however

however there are ma-
terials for constructing
good pens and it is
advisable that Dr. Rott
should early next season
personally organize an
efficient system both
in Molokai and
Kauai.

5. The Deputy Col-
lector may be proposed
in paragraph 4 visit
the manufacturer in
the East Coast but as
the time seems to have
passed for this year the
Board will arrange for
his tour on a future
occasion the conditions
of manufacture are
so different that the
visit will not be so

detrimental

Therefore it is pro-
posed for the Board
to go to the East
Coast next

detrimental as it other-
wise might have been.

6. There is much
truth in the observation
contained in paragraph
4 of Dr. Rott's report
and the only way in
which the knowledge
of scientific principles
in conducting salt
manufacture can be
imparted to the officials
for the purpose of im-
proving the operations
in their respective
ranges seems to be to
establish a model
set of pens at places
which the Deputy Col-
lector might visit in
turn so that after

personal

personal instruction
under Dr. Patton's super-
intendence they might
teach the process to the
manufacturers. ^{Had} ~~There~~
^{than done} ~~the~~ ~~consequence~~ there
would be valid grounds
for the rejection of im-
purity salt and eventu-
ally the price to be paid
for the article might
be made dependant on
its quality. The Board of Revenue

will be requested to suggest
some definite arrangements
for the purpose of giving
effect to this suggestion.

The Govt agree in
the view taken by the
Board in paragraph
8 of their Memorandum
that interference by
legislation with the
process of manufacture
is impossible with
present information.

8. The facts which
Dr. Patton brings to-
gether in different parts
of his Report on the
subject of measurement
and weighing of salt
are exceedingly interest-
ing but no change of
the system under which
all Govt transactions
are conducted by weigh-
ment can, ^{for the present} ~~be thought~~
^{possible} ~~of~~ nor can the retail
trade be interfered
with by Law.

9. There is in the
Report much technical
instruction on the phys-
ical constitution of various
kinds of salt and their
properties which will
prove more useful to

Departmental

Departmental Officers.

On Patton's observations on the possibility of developing the trade in swamp salt in various parts of the country should receive the attention of the Board and Collectors. The experiments and observations suggested in the 135th and following paragraphs of his Report should also

be carried out as far as is practicable by selected officers in communication with himself. The Board are pleased to think that this would be practicable by selected officers in communication with himself.

10. The Govt. officer generally of the district has conveyed in paragraph 11 of the Board's Proceedings

I have written to the collector of the district to carry out the suggestions of the Board.

Proceedings and convey in the view taken by them on Dr. Patton's suggestion for the introduction of salt from the East Coast with Malabar and Cochin. (p. p. 13-15).

11. With reference to paragraph 150 of Dr. Patton's Report any rule which hurries salt into store in a wet state should be cancelled and arrangements should be made as far as possible at the various points for its proper drying as suggested.

12. His Excellency the Governor in Council is not prepared at present

present to ask the Govt
of India to place Mr
Hutton's services perma-
nently at the disposal
of the Board. Under
existing arrangements
he will remain till
the end of 1895 and
by that time His Ex-
cellency hopes that pro-
bable results will show
the advantage of his
employment on this
side.

J. H. C.

To Mr. Hutton
Secretary
and
Superintendent
of the
} J. H. C.

This image shows a blank, aged, cream-colored page, likely an endpaper or flyleaf from an old book. The paper has a slightly textured appearance with some minor discoloration and faint, illegible markings, possibly from a previous page or a watermark. A small, dark, irregular stain is visible near the bottom center of the page.

173-174
C. J. R.