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MADRAS RECORD OFFICE

GOVERNMENT OF MADRAS

Reverse DEPARTMENT

G.O. No.	544	Press
B.P. No.		Mis.
Dated	4-5-1874	196

Not to be folded or roughly handled

19

*Proceedings of the Madras Government, Revenue Department,
4th May 1874.*

Read the following:—

No. 53. Proceedings of the Board of Revenue, dated 2nd March 1874, No. 451.
Read the following letter from W. McQUHAR, Esq., Collector of Madura, to
J. GROSE, Esq., Secretary to the Board of Revenue, dated 5th February
1874, No. 28.

With reference to the correspondence noted in the margin, I have the honour
to state that the Salt Deputy-Collector brought* to my notice that the destruc-
tion of the spontaneous salt forming in the Pombarai and Nariapoor swamps
cannot be efficiently carried out, and that the watching of the swamps during the
time of the formation of the salt is naturally ineffectual, and suggested that
they should be thoroughly drained by a net work of canals in connection with
tidal streams at their head.

2. I called upon the District Engineer for an expression of his opinion on
the subject, and, after some delay, he replied that it is quite impossible to promise
a reply unless special sanction is obtained for a surveyor to prepare the necessary
plans and levels, and recommended my applying to the Board for sanction to
entertain.—

1 Surveyor, at Rs. 60 per mensem, for four months	Rs. 240
4 Lascars, at Rs. 6 per mensem, do.	96
Total...	336

On this special staff being placed at his service, he states that he will be able
to furnish me with the requisite information.

3. In reply, I pointed out to him that, if additional subordinates are required
in the Public Works Department, application for them should be made in that
department; but, as no funds are placed at his disposal for salt-works, he states he
is unable to point out the source from which the cost in question can be met.

4. In these circumstances, I request that sanction may be obtained for the
entertainment of the establishment, the cost of which can be met from Salt
Contingencies provided for in the budget for 1874-75.

—

ENCLOSURE No. 1.

From N. RAMASAMY, Deputy-Collector, in charge of Salt Department, Madura, to
W. McQUHAR, Esq., Acting Collector of Madura, dated Ramnad, 10th April 1872, No. 62.

I now leave to address you upon the subject of the spontaneous salt generated along the coast
of this district.

2. The sea-board abounds in several minor tidal streams and swamps formed by them; during
the spring-tides sea-water runs up into the hollows of the beds; there it is retained and, as evapo-
ration takes place, salt is found in large or small quantities. Independent of the streams, spontane-
ous salt is formed in the pits in the low ground along the coast. Salt is not generated here by the
flow of sea-water. Rain-water retained in the low ground gradually absorbs saline matter from

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4th May 1874.*

the earth, and, after evaporation for some time, is converted into brine in which salt is generated. In the tidal streams salt is formed more precipitately than in the low ground.

3. The most prolific fields for spontaneous salt are the Pombarai and Nariapoor swamps at the southern end of the coast. They are fully described in paragraphs 83, 84, and 86 of Mr. Clarke's report on the salt-work of Madura, dated the 14th November 1864. To these swamps I beg to draw your special attention at present, as affecting the salt-sales in the southern stations not unlikely to a great extent.

4. The watch and destruction of salt in the minor streams and swamps is more effectual than in the larger swamps. In the former the salt formed is generally very flimsy; when the tide is trodden by men and cattle and the flakes of salt mixed up with earth, the salt can be said to be destroyed. This process is repeated as often as salt is formed after tide or rain. On the other hand, in the case of the larger swamps the brine is stronger and the crystals formed in them are therefore larger. By the incessant process of destruction, the crystals are only concealed from view; the people in the neighbourhood carry off the salt mixed with earth. The crystals are then separated, washed, and sold for culinary purposes, the residue being used for curing fish.

5. The efficient guarding of the swamps referred to is found to be impracticable. The swamp area extending the latest Pombarai being twenty to twenty-five square miles in extent. Half a dozen watchmen or constables, supposing that they do not connive at the act, cannot effectually prevent large gangs of men from the neighbourhood and villages far west from pilfering the salt. Even should they succeed any in the act, the punishment awarded is so light, being a small fine or imprisonment in default, that it does not deter others from their pilfering operations.

6. The collection and the sale of the salt is not desirable, first, because the people do not like the duty, and secondly, because the sale of it facilitates the disposal of pilfered salt, which is commonly mixed up with that bought from Government, is introduced into the market with impunity.

7. The only alternative therefore for the suppression of trade in pilfered salt is to take measures for preventing the growth of salt in the swamps. Mr. Clarke suggested this course in paragraph 86 of his report quoted above, but no action has been as yet taken in that direction.

The Government* called for a report from the Department of Public Works on the practicability of Mr. Clarke's proposal to dam up each water in the Pombarai swamp and abstract sea-water from it, as also to prevent the flow of sea water into the Nariapoor swamp. If the matter appears to be at a standstill.

8. The plan recommended by Mr. Clarke in regard to the Pombarai swamp, will, I am afraid, affect the manufacture of salt in the pans of Mutturuganadapattam which are situated at one end of the Nariapoor swamp; the swamp by a network of canals in connection with the tidal stream has been salted in my humble opinion, not only serve the object in view, but, being used during the period of the salt-manufacturing season. Accordingly, I beg to suggest that further research be made in connection with the project for the excavation of the proposed canals, and to the same end, now in the hands of the Department of Public Works.

* Resolution No. 2.

From the same office dated 5th May 1872, No. 63.

On the 25th of October, No. 204, dated the 5th instant, I have the honour to submit, for your consideration, a statement of the progress of the Nariapoor salt-swamp. The estimate is submitted in the form of a bill of the ground areas which the proposed canal is to be built, and to be assumed to be a certain number of acres can be formed; accordingly, I have the honour to request the Superintendent Engineer to be requested to have the line of the proposed canal surveyed and marked.

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4th May 1874.*

2. The thorough drainage of the salt-swamp will save Government from the loss of its salt-revenue caused by the pilfering and sale of the spontaneous salt formed in the swamp.

The proposed drainage works will probably be enormously expensive, and it is possible that the salt may be quite fit for consumption, and that the works would be a mistake. The amount of the approximate estimate referred to by the Deputy-Collector ought to have been reported.

2. Before moving further in the matter, the Board resolve to request Dr. Rutton to state whether he has seen these swamps or salt formed in them, and what his opinion is on the subject of the proposed works.

No. 53a. Proceedings of the Board of Revenue, dated 1st April 1874, No. 771.

Read again letter from Collector of Madura, dated 5th February 1874, No. 28, recorded in Board's Proceedings, dated 2nd March 1874, No. 451.

Read also the following letters:—

From W. McQUHAE, Esq., Collector of Madura, to J. GROSE, Esq., Secretary to the Board of Revenue, dated Keelakurai, 23rd February 1874, No. 44.

I have the honour to report that collisions frequently occur between the Police and persons who assemble to carry off spontaneous salt from the Pombarai Swamp near the Mutturuganadapattam Salt-pans in this district. There are women and old men in these assemblies, but there are also men armed with clubs, pointed sticks, and even matchlocks, who show fight if pressed too closely by the Police. In 1872, one man was killed and others were wounded in an affair of this sort. Last year, in the middle of September, the Kavalgars and Police were beaten off by persons carrying away salt, and some days afterwards there was another fight in which the Police are reported to have fired away sixteen or twenty rounds of ball-cartridge; but it was dark, and, so far as is known, no one was hit. The result of this battle was unsatisfactory. The Police took prisoners two women and an old man.

2. The existing arrangement is that eight Kavalgars and sometimes two Superintendents, called Kanganies, are employed to watch the swamp when spontaneous salt is likely to form, and are paid out of the allotment for the collection and destruction of spontaneous salt. This guard is insufficient, and it seems very desirable that something should be done for the more effectual removal of this temptation. The best plan would be to prevent the formation of salt by draining the swamp, or by flooding it if it is below the sea; but the District Engineer informs me that he can give me no level and no opinion on the matter, unless a special establishment is provided for the purpose, and I addressed the Board on the subject in letter No. 28, dated 5th February 1874.

3. At present, I beg to submit, for sanction, an estimate for guarding and collecting the salt formed in this swamp, at a maximum cost of Rupees 2,821-12-6. This estimate was prepared by the Deputy-Collector, and his covering letter, dated 25th October 1873, No. 204, gives in detail the plan he proposes to adopt. The

Superintendent of Police has also been consulted, and considers the proposed force sufficient.

4. The average quantity of salt to be gathered will be only about fifty garces, so that the actual expenditure will be below the estimate. The cost of this salt will be about the same as that of manufactured salt, but some allowance must be made to persons buying it as it packs more closely. I have lately visited the swamp, and, in my opinion, the proposed expenditure is necessary in the interests of peace and of the salt revenue.

ENCLOSURE No. 1.

From M. COMARASAMY, Deputy-Collector, Salt Department, to H. W. BLISS, Esq., Acting Collector of Madras, dated Viravandapattam, 25th October 1873, No. 204.

I have the honour, with reference to my letter No. 191, dated the 11th instant, to submit, for your consideration, estimates for the collection of the spontaneous salt during the next season from the Pambalai Swamp.

2. The swamp is eight miles long between its extreme ends, and the tracts in which salt crops up lie over a length of six miles and four and a half furlongs; setting aside the intermediate strips, where the growth of salt is uncertain, I estimate the length of the swamp in which salt is formed thick enough to collect at three miles, and the breadth at one-sixteenth of a mile, the widest part being about one-eighth of a mile, and the narrowest about five yards.

3. The quantity and quality of the salt deposited depends upon that of the rain-water which the swamp receives during the monsoon, the amount of evaporation during the succeeding hot months, and the immediate showers. The smaller the quantity of rain-water, the steadier the evaporation, and the larger the crystals, and greater the deposit of salt. Intermediate showers have their effect both ways; they destroy the crop of salt already formed, and at the same time help the growth of salt by washing into pits the saline particles which lie in dry form on the bed of the swamp, and thus help the growth of new crops of salt.

4. The quantity of salt fit for storage likely to be collected annually is estimated at 24,000 maunds, or 200 garces; but this is the highest quantity likely to be formed in any season. In 1860, which was one of the prolific years for spontaneous salt, 6,011 maunds were collected from a strip two miles long; according to this data, about 10,866 maunds or 86 garces of salt alone are likely to be raised in a year in the part of the swamp referred to in paragraph 2. However, for the purpose of the estimate submitted herewith, I assume the quantity of salt likely to be gathered at the highest possible figure, 24,000 maunds or 200 garces.

5. The season for spontaneous salt begins in May and lasts till the middle of October. The swamp therefore requires a careful watch for six months, unless by heavy intermediate rain-fall the swamp is flooded. High winds only tend, as already said, to the growth of successive crops of salt. Accordingly, I would recommend a temporary establishment of eight Kavalgars at a cost of Rupees 44 per month, and a party of eight Constables with one Head Constable for six months for watching the swamp. The services of the Kavalgars will be availed of to collect gathering-coolies from the villages, and to act as assistants during the gathering of salt. They will work in two parties, each consisting of four Head Kavalgars and four Kavalgars; one party will superintend the gathering-coolies, and the other patrol the swamp with the Constables. The Police will also work in two parties; three Constables will remain at the platform, and the rest patrolling the swamp.

8 Head Kavalgars, 1 Head Constable, 8 Constables, at Rs. 11 each per month	Rs. 154
1 Head Constable, 12 Constables, at Rs. 11 each per month	165
1 Head Constable, 12 Constables, at Rs. 11 each per month	165
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6. The gathering of the salt will take place under the supervision of an Assistant Superintendent on 20 Rupees a-month. This officer shall inspect the swamp every day, and point out the parts where the salt is to be collected, and return to the platform to receive the salt gathered. He shall also store the salt when well dried. These duties will require of the Assistant Superintendent constantly moving along the range of the swamp, and I think it, therefore, not more than fair, that he should receive a special allowance of 10 Rupees a-month for maintaining a pony or a bandy. The Assistant Superintendent shall be assisted by a measurer from the nearest salt division in receiving the salt from the gathering-coolies, and I recommend the grant of a letter of one-third of his pay, viz., 2 Rupees a-month to the measurer.

7. The gathering-coolies shall be employed in as many convenient gangs and numbers as can be effectively supervised, and shall be paid daily upon the quantity of salt delivered at the platform. From inquiries I made in the villages about the swamp, the coolies would require daily payments like peasant labourers for the salt they may gather and deliver to Government. Such salt cannot be at once weighed and received into the heap on account of the moisture existing in it. With a view, therefore, to meet the wishes of the coolies and guard against undue wastage, I beg to suggest that the salt gathered be received and paid for daily by measurement at 124 heaped mereals per garce, the difference between the heaped and true mereal being, in my opinion, sufficient to cover the wastage due to moisture in the salt.

8. I estimate the cost per garce or 120 maunds at Rupees 7-8-0. The site of the platform has three miles of the salt-swamp on either side; the gathering-coolies here, therefore, to carry salt an average distance of one mile and a half; assuming that a cooly whose wages I set down at 3 Annas a day would make three trips to the platform, he would be able to deliver three maunds of salt at the platform in one day. Thus, including collection and transport, the salt would cost Rupees 7-8-0 the garce, which is Rupees 1-2-0 within the cost incurred at Vadaraniem in Tanjore, where 2 Rupees a garce are paid for collection, and 4 Annas per 100 yards for transport.

9. The charge for storage and shelter amounts to Rupees 12-3-0 per heap of ten garces, or 1,200 maunds or Rupees 1-3-6 per garce. The particulars are annexed in the margin. The cost at Vadaraniem is Rupees 2-2-0 per garce for storage alone.

Vadaraniem rates, collection per garce	Rs. 2 0 0
Transport do. for one and half mile	0 10 0
Total	2 10 0

Thirty-six carrying coolies or chittels for conveying salt to the weighing-machine, at 4 Annas per head	Rs. 3 5 0
Eighteen coolies for weighing salt and carrying it to the place of storage, at 3 Annas a head	2 0 0
Five men for making the heap, at 4 Annas per head	0 10 0
Eighteen men for covering the heap with earth twelve inches thick, and erecting a guard for the purpose, at 3 Annas per head	3 5 0
Total	12 2 0

10. The contingencies I estimate at Rupees 184-0-0 as follows:-

Leveling the site of the platform 120 yards by 65 yards, and giving it a coating of sand	Rs. 15 13 0
Fencing round the platform	12 3 0
A shed for the Assistant Superintendent and the guard	20 0 0
Eight thatched huts for Constables, at 10 Rupees each	80 0 0
One do. for the Head Constable	10 0 0
Sundries, including charges for spades, baskets, conveyance of the weighing-machine, etc.	40 0 0

Total 184 0 0

Collecting and transport of 24,000 maunds, or 200 garces of salt from the swamp to the platform	Rs. 1,500 0 0
Storage and sheltering twenty heaps at Rupees 12-3-0 per heap	243 12 0
Temporary Establishment	894 0 0
Contingencies	184 0 0
Total	2,821 12 0

11. Thus supposing that twenty heaps or 24,000 maunds of salt could be collected in a season, the estimated cost amounts to Rs. 1,822, or 1 Anna 11 Pies a maund.

12. The spontaneous salt packs more closely than the manufactured article; for this reason, I would suggest that some inducement,

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4th May 1874.*

by way of discount, be allowed to purchasers, who buy by weight and retail by bulk. At present I cannot propose any rate, as the out-turn in bulk of a given weight of salt would depend upon the quality of the salt to be gathered, and vary with the circumstances referred to in paragraph 3, as affecting the production of salt in the swamp.

Enclosure No. 2. - Estimate.

From J. L. RATTON, M. D., on special salt duty, to H. E. STOKES, Esq.,
Acting Sub-Secretary to the Board of Revenue, dated Ennore, 21st March 1874.

I have the honour to inform you, with reference to paragraph 2 of Board's Proceedings, No. 131 of 2nd of March 1874, that I obtained a distant view of the Pombarai Swamp from the neighbourhood of the Mutturagunadapatam Salt pans situated at the north end of the swamp which I visited in August last. I did not then examine the swamp.

I have seen the salt formed in this swamp and think it purer and so far better than that manufactured at Mutturagunadapatam, which it however very closely resembles in appearance.

The Mutturagunadapatam Salt pans are at present supplied with brine from wells which do not yield a sufficient quantity. In my report on the Madura District, at present, I believe, before the Board, I recommended that a canal be cut through the Pombarai Swamp to the sea, to bring a supply of sea-water to the salt pans. The Deputy Collector informed me, that this canal would cut through the low grounds in which swamp salt forms, and prevent or at least greatly diminish its formation.

If the Deputy Collector had only this canal in view when proposing drainage works, and if the canal would really fulfil the double object of draining the swamp and bringing brine to the salt manufactory, I would support his suggestion. But more than I think, it would be well to survey the site, and count the cost before commencing the canal, as the pans are nearly a mile and a half from the sea, and the canal would consequently be an expensive work both to construct and to maintain. But if it be proposed to construct a network of canals, with the sole object of preventing the formation of swamp salt and of carrying brine, I think the expense of the work would out-balance the saving which it is proposed to effect.

I believe instead that the best way to dispose of the swamp salt would be to collect it, bring it into the market, and sell it. Both Mr. Clarke and the Deputy Collector of this district considered that it could not be destroyed cheaply and without the greatest injury to the market. The Deputy Collector states that in spite of the efforts made to diminish it, it has for years been a market to the great detriment of the revenue. It is a very pure salt, and so far better than that manufactured at the pans, and there can be no difficulty in selling it, as it is not distinguishable from the same.

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4th May 1874.*

6. It may be objected that the people dislike the salt, and N. Ramasawmy says, paragraph 6 (Enclosure 1), that its sale would facilitate the disposal of pilfered salt. With regard to the first objection, I was told upon the spot, and it may be gathered from Enclosure No. 1 and previous reports, that the people steal and consume as much as they can get of it, so that their repugnance, if it exists, and the evidence is quite the other way, is easily overcome. With regard to the second objection, if we gather all the swamp salt for sale, there will be no pilfered salt left for disposal, and if we don't succeed in gathering all, the facility for disposal will remain precisely as it is; for, as before remarked, it depends upon the resemblance of the two salts.

7. Three hundred garces of salt are formed on the average annually in the Pombarai Swamp. Mr. Clarke stated, at paragraph 83 (Report on Madura), that it would cost Rupees 15-12-0 a garce to bring it into Mutturagunadapatam. The Deputy Collector, when I met him in the neighbourhood last August, said that it would cost from Rupees 10 to 20 per garce, according to the distance, to bring it into store. The two estimates are pretty equal. Granting, however, that it would cost Rupees 20 to bring it into store, we can clear Rupees 60,000 annually off the Pombarai Swamp, as that is the difference or profit balance on 300 garces of swamp salt stored at Rupees 20 and sold at Rupees 240 a garce. Whether considered in the light of saving the expense of drainage works, of curtailing loss from pilfering and illicit sales, or as an actual source of revenue, I believe that the collection and sale of swamp salt will be found the most economic method of its disposal.

The papers above recorded relate to the Pombarai Swamp and the best course to be adopted for the disposal of the spontaneous salt which is found thereon.

2. The Board concur with Dr. Ratten in his opinion that the best plan will be to collect and store the swamp salt, and they accordingly resolve to direct that steps be taken without delay for its collection and storage; the Collector will report the quantity collected.

3. The Board are not prepared to accede to the Collector's recommendation that a reduction of price be made in the case of the swamp salt on account of the difference in bulk as compared with manufactured salt, as any such allowance appears from Dr. Ratten's remarks to be unnecessary.

4. With reference to the Collector's letter of the 3rd February, No. 28, the Board are of opinion that the swamp should be surveyed, and the cost of carrying a canal to the Mutturagunadapatam Pans estimated. The special establishment proposed for the purpose is sanctioned, the charge being met from the provision for contingencies.

5. These papers will be submitted to Government with the request that the temporary establishment required for the collection and storage of the spontaneous salt, at a monthly cost of Rupees 149, may be sanctioned at an early date. The charge can be met from general savings.

*Proceedings of the Madras Government, Revenue Department,
4th May 1874.*

No. 1. ORDER THEREON, 4th May 1874, No. 544.

Separate Revenue, No. 6.

Sd/-

The establishment proposed in
paragraph 5 is sanctioned.

True Extract.

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

PROCEEDINGS OF THE BOARD OF REVENUE, dated 2nd March 1874.

Read the following letter from W. McQUHAE, Esq., Collector of Madura, to J. GROSE, Esq., Secretary to the Board of Revenue, dated 6th February 1874, No. 28:—

With reference to the correspondence noted in the margin, I have the honour

to state that the Salt Deputy-Collector brought* to my notice that the destruction of the spontaneous salt forming in the Pombarai and Nariapoor swamps cannot be efficiently carried out, and that the watching of the swamps during the time of the formation of the salt is naturally ineffectual, and suggested that they should be thoroughly drained by a net work of canals in connection with tidal streams at their head.

2. I called upon the District Engineer for an expression of his opinion on the subject, and after some delay he replied that it is quite impossible to promise a reply unless special sanction is obtained for a Surveyor to prepare the necessary plans and levels, and recommended my applying to the Board for sanction to entertain

	Rs.
1 Surveyor, at Rupees 60 per mensem, for four months	240
4 Lascars, at Rupees 6 per mensem, do.	96
Total	336

On this special staff being placed at his service he states that he will be able to furnish me with the requisite information.

3. In reply, I pointed out to him that if additional subordinates are required in the Public Works Department, application for them should be made in that Department, but, as no funds are placed at his disposal for Salt works, he states he is unable to point out the source from which the cost in question can be met.

4. In these circumstances, I request that sanction may be obtained for the entertainment of the establishment, the cost of which can be met from Salt Contingencies provided for in the Budget for 1874-75.

Enclosure No. 1.

From N. RAMASAMY, Deputy-Collector in charge of Salt Department, Madura, to W. McQUHAE, Esq., Acting Collector of Madura, dated Ramnad, 10th April 1872, No. 62.

I beg leave to address you upon the subject of the spontaneous salt generated along the coast of this district.

2. The sea beach abounds in several minor tidal streams and swamps formed by them; during the spring tides sea water runs up into the hollows of the beds; there it is retained and as evaporation takes place salt is found in large or small quantities. Independent of the streams spontaneous salt is formed in the pits in the low ground along the coast. Salt is not generated here by the flow of sea water. Rain water retained in the low ground gradually absorbs saline matter from

Col. of 1874

REVENUE.

THE BOARD OF REVENUE

do. do. do.

Dated May 4th.

Recd.

G. O. 4th May 1874, No. 514.

MAY.

No. 53-54

Temporary Subordinate for Collector,
Office of Revenue Salt & Fisheries, Madura,
District Madurai. Sanctioned and forwarded.

the earth, and after evaporation, for some time, is converted into brine in which salt is generated. In the tidal streams, salt is formed more precipitately than in the low ground.

3. The most prolific fields for spontaneous salt are the Pombarai and Nariapoor swamps at the southern end of the coast. They are fully described in paragraphs 83, 84, and 90 of Mr. Clarke's report on the Salt work of Madras, dated the 15th November 1864. To these swamps I beg to draw your special attention at present, as affecting the salt sales in the southern stations, not unlikely to a great extent.

4. The watch and destruction of salt in the minor streams and swamps is more effectual than in the larger swamps. In the former, the salt formed is generally very flimsy; when the bed is broken by men and cattle and the flakes of salt mixed up with earth, the salt can be said to be destroyed. This process is repeated as often as salt is formed after tide or rain. On the other hand, in the case of the larger swamps the brine is stronger and the crystals formed in them are harder larger. By the aforesaid process of destruction, the crystals are only concealed from view, the people in the neighbourhood carry off the salt mixed with earth. The crystals are then separated, washed, and sold for culinary purposes, the residue being used for curing fish.

5. The aforesaid guarding of the swamps referred to is found to be impracticable. The swamps are extensive, the larger Pombarai being twenty to twenty-five square miles in extent. It is a large number of Constables, supposing that they do not connive at the act, cannot effectually prevent gangs of men from the neighbourhood and villages far west, from pilfering the salt. Even should they succeed in the act, the punishment awarded is so light, being a small fine or imprisonment for a short time, that it does not deter others from their pilfering operations.

6. The collection and the sale of the salt is not desirable, first, because the people do not like to sell their salt, secondly, because the sale of it facilitates the disposal of pilfered salt, which commingles with what is bought from Government and is introduced into the market with impunity.

The only alternative, therefore, for the suppression of trade in pilfered salt, would be to prevent the growth of salt in the swamps. Mr. Clarke suggested this course in paragraph 91 of his report, dated above, but no action had been as yet taken in that direction.

The Government called for a report from the Department of Public Works on the subject of Mr. Clarke's proposal to dam up the salt water of the Pombarai swamp and cut one main water from it, as also to prevent the flow of sea water into the Nariapoor swamp. Since the water appears to be as a stand still.

The plan recommended by Mr. Clarke in regard to the Pombarai swamp will, I am a frank man, be the means of saving salt in the Ponds of Muttungunthapattam which are situated at the end of the swamp. A thorough draining of the swamp by a network of canals in conjunction with the tidal streams will be a great advantage, not only to save the object in view, but be also useful for the cultivation of those ponds for salt manufacturing purposes. Accordingly, I beg to suggest the Government to give consideration to the connection with the project for the excavation of an irrigation channel from the sea to the land, now in the hands of the Department of Public Works.

(True Copy)
(Signed) W. McQUHAE,
Collector.

Enclosure No. 1
To the Collector, Madras, dated 1st May 1872, No. 83.
I have the honour to submit for the consideration of the Government, the estimate of the Nariapoor Salt swamp. The estimate is for the excavation of a canal, 1000 feet long, across which the proposed canal is to be cut. It is not possible to form an accurate estimate can be formed. Accordingly, I have the honour to suggest that the Government be requested to have the line of the proposed canal surveyed and the estimate prepared.

2. The thorough drainage of the salt swamp will save Government from the loss of its salt revenue, caused by the pilfering and sale of the spontaneous salt formed in the swamp.

(True Copy)
(Signed) W. McQUHAE,
Collector.

The proposed drainage works will probably be enormously expensive, and it is possible that the salt may be quite fit for consumption, and that the works would be a mistake. The amount of the approximate estimate referred to by the Deputy-Collector ought to have been reported.

2. Before moving further in the matter, the Board resolve to request Dr. Rutton to state whether he has seen these swamps or salt formed in them, and what his opinion is on the subject of the proposed works.

(True Copies and Extract)
(Signed) H. E. STOKES,
Acting Sub-Secretary.

To the Collector of Madras
Dr. J. J. L. Rutton, on Special duty.

No. 771.

PROCEEDINGS OF THE BOARD OF REVENUE, dated 1st April 1874.

Read again letter from Collector of Madura, dated 5th February 1874, No. 28, recorded in Board's Proceedings, dated 2nd March 1874, No. 451.

Read also the following letters:—

From W. McQUHAE, Esq., Collector of Madura, to J. GEORGE, Esq., Secretary to the Board of Revenue, dated Keelakarai, 23rd February 1874, No. 44.

I HAVE the honour to report that collisions frequently occur between the Police and persons who assemble to carry off spontaneous salt from the Pomburai Swamp near the Muttaregundapatam Salt-pans in this district. There are women and old men in these assemblies, but there are also men armed with clubs, pointed sticks, and even matchlocks, who show fight if pressed too closely by the Police. In 1872, one man was killed and others were wounded in an affair of this sort. Last year, in the middle of September, the Kavalgars and Police were beaten off by persons carrying away salt, and some days afterwards there was another fight in which the Police are reported to have fired away sixteen or twenty rounds of ball-cartridge; but it was dark, and, so far as is known, no one was hit. The result of this battle was unsatisfactory. The Police took prisoners two women and an old man.

2. The existing arrangement is that eight Kavalgars and sometimes two Superintendents, called Kanganies, are employed to watch the swamp when spontaneous salt is likely to form, and are paid out of the allotment for the collection and destruction of spontaneous salt. This guard is insufficient, and it seems very desirable that something should be done for the more effectual removal of this temptation. The best plan would be to prevent the formation of salt by draining the swamp, or by flooding it if it is below the sea; but the District Engineer informs me that he can give me no levels and no opinion on the matter, unless a special establishment is provided for the purpose, and I addressed the Board on the subject in letter No. 28, dated 5th February 1874.

3. As present, I beg to submit, for sanction, an estimate for guarding and collecting the salt formed in this swamp, at a maximum cost of Rupees 2,821-13-6. This estimate was prepared by the Deputy Collector, and his covering letter, dated 25th October 1873, No. 204, gives in detail the plan he proposes to adopt. The Superintendent of Police has also been consulted, and considers the proposed force sufficient.

4. The average quantity of salt to be gathered will be only about fifty garce, so that the actual expenditure will be below the estimate. The cost of this salt will be about the same as that of manufactured salt, but some allowance must be made to persons buying it as it packs more closely. I have lately visited the swamp, and, in my opinion, the proposed expenditure is necessary in the interests of peace and of the salt revenue.

1874.

Board of Revenue,

MADRAS.

PROCEEDINGS, 2ND MARCH 1874, No. 451.

Ind

Received

MARCH

No. 451

Permitted and necessary during in Madura District, in which spontaneous salt is formed. With reference to proposal from Collector for the purpose of... by a lot of... and to give his opinion on proposed work.

Enclosure No. 1.

From M. DONALDSON, Deputy-Collector, Salt Department, to H. W. BLISS, Esq., Acting Collector of Madras, dated Viravanadapatam, 25th October 1873, No. 204.

I have the honour, with reference to my letter No. 191, dated the 11th instant, to submit, for your consideration, estimates for the collection of the spontaneous salt during the next season from the Pombarai Swamp.

2. The swamp is eight miles long between its extreme ends, and the tracts in which salt crops up lie over a length of six miles and four and a half furlongs; setting aside the intermediate strips where the growth of salt is uncertain, I estimate the length of the swamp in which salt is found thick enough to collect at three miles, and the breadth at one-sixteenth of a mile, the widest part being about one-eighth of a mile, and the narrowest about five yards.

3. The quantity and quality of the salt deposited depends upon that of the rain-water which the swamp receives during the monsoon, the amount of evaporation during the succeeding hot months, and the intermediate showers. The smaller the quantity of rain-water, the steadier the evaporation, and the larger the crystals, and greater the deposit of salt. Intermediate showers have their action both ways; they destroy the crop of salt already formed, and at the same time hasten the growth of salt by washing into pits the saline particles which lie in waste form on the bed of the swamp, and thus help the growth of new crops of salt.

4. The quantity of salt fit for storage likely to be collected annually is estimated at 24,000 maunds, or 200 garces, but this is the highest quantity likely to be formed in any season. In 1861, which was one of the best years for spontaneous salt, 6,917 maunds were collected from a strip one mile long, according to this account about 10,000 maunds or 80 garces of salt alone are likely to be raised in a season in the parts of the swamp referred to in paragraph 2. However, for the purpose of making an estimate, I assume the quantity of salt likely to be gathered as the highest possible figure, 24,000 maunds or 200 garces.

5. The season for spontaneous salt begins in May and lasts till the middle of October. The swamp therefore requires a careful watch for six months, unless by heavy intermediate rain-fall the swamp is flooded, lighter showers only tending, as already said, to the growth of successive crops of salt. Accordingly, I would recommend a temporary establishment of eight Navalgars at a cost of Rupees 14 per month, and a party of eight Constables with one Head Constable for six months for watching the swamp. The services of the Navalgars will be availed of to collect gathering-coolies from the villages, and to act as guides during the gathering of salt. They will work in two parties, each consisting

1 Head Constable, at 2 Annas each	20
8 Constables, at 2 Annas each	160
8 Navalgars, at 14 Annas each	112
Total	292

of one head constable and four Constables, and they will, superintend the gathering-coolies and the other party of the swamp with the Constables. The Police will also work in two parties, one of Constables with one Head Constable watching the platform, and the other patrolling the swamp.

6. The gathering of the salt will take place under the supervision of an Assistant Superintendent, or his Deputy, who will visit the swamp every day, and point out the parts where the salt is most likely to be found, and the platform to receive the salt gathered. He will also be responsible for the collection of the salt, and will require of the Assistant Superintendent a suitable arrangement for the storage of the salt, and I think it, therefore, not more than fair, that he should be allowed a salary of 10 Rupees a month for maintaining a party of men. The Assistant Superintendent will be assisted by a measurer from the nearest salt depot, and the gathering-coolies, and I recommend the grant of a bonus of one-third of his pay for each day he is employed in the service.

7. The gathering-coolies shall be employed in as many convenient gangs and numbers as can be effectively supervised, and shall be paid daily upon the quantity of salt delivered at the platform. From inquiries I made in the villages about the swamp, the coolies would require daily payments like peasant labourers for the salt they may gather and deliver to Government. Such salt cannot be at once weighed and received into the heap on account of the moisture existing in it. With a view, therefore, to meet the wishes of the coolies and guard against undue wastage, I beg to suggest that the salt gathered be received and paid for daily by measurement at 124 Acaped mercahs per garce, the difference between the heaped and struck mercahs being, in my opinion, sufficient to cover the wastage due to moisture in the salt.

8. I estimate the cost per garce or 120 maunds at Rupees 7-8-0. The site of the platform has three miles of the salt-swamp on either side; the gathering-coolies have, therefore, to carry salt an average distance of one mile and a half; assuming that a cooly whose wages I set down at 3 Annas a day would make three trips to the platform, he would be able to deliver three maunds of salt at the platform in one day.

* Vadarani rates, collection per garce	Rs. 7 8 0
Transport and for cart and half-mile	0 10 0
Total	8 10 0

Thus, including collection and transport, the salt would cost Rupees 7-8-0 the garce, which is Rupees 1-2-0 within the cost incurred at Vadarani in Tanjore, where 2 Rupees* a garce are paid for collection, and 4 Annas per 100 yards for transport.

9. The charge for storage and shelter amounts to Rupees 12-3-0 per heap of ten garces, or 1,200 maunds, or Rupees 1-3-0 per garce. The particulars are annexed in the margin. The cost at Vadarani is Rupees 2-2-0 a garce for storage alone.

10. The contingencies I estimate at Rupees 184-0-0 as follows:—

Leveling the site of the platform 150 yards by 60 yards and giving it a coating of sand	16 13 6
Fencing round the platform	12 3 0
A shed for the Assistant Superintendent and the guard	20 0 0
Eight thatched huts for Constables, at 10 Rupees each	80 0 0
One do. for the Head Constable	10 0 0
Sundries, including charges for spades, baskets, conveyance of the weighing-machine, etc.	40 0 0
Total	184 0 0

11. Thus supposing that twenty heaps of 24,000 maunds of salt could be collected in a season, the estimated cost amounts to Rs. 2,822, or 1 Anna 11 Pice a maund.

12. The spontaneous salt packs more closely than the manufactured article; for this reason I would suggest that some inducement, by way of discount, be allowed to purchasers, who buy by weight and retail by bulk. At present I cannot propose any rule, as the discount in bulk of a given weight of salt would depend upon the quality of the salt to be gathered, and vary with the circumstances referred to in paragraph 3, as affecting the production of salt in the swamp.

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16007
 1874. April 16
 Board of Revenue
 MADRAS.

PROCEEDINGS, 16th APRIL 1874, NO. 771.

[Signature]

Revenue Secy.

APRIL
 No. 771.

Spontaneous Self-forming in Portu-
 gal in Madras District.—Collector directed
 to take steps for collection and storage of
 and Government requested to sanction required
 to pay establishment of the proposed
 monthly cost of Rs. 100. Special resolution
 sent for survey of swamp, succeeded, and
 Collector's proposal for a resolution in favor of
 the self-formation.

(20)

16007/1874 No. 771-772
 Madras Revenue Secy.
 16th April 1874

16007/1874 No. 771-772
 Madras Revenue Secy.
 16th April 1874

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 Madras Revenue Secy.
 16th April 1874

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 Madras Revenue Secy.
 16th April 1874