

MADRAS RECORD OFFICE.

Government of Madras.

Marine DEPARTMENT.

G.O. No.	368	Press ~~Mis~~
Dated	6. 8.	18 59

Not to be folded or roughly handled

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*Proceedings of the Madras Government, Marine Department,
from 6th to 12th August 1859.*

No. 1. Read the following Proceedings of the Madras Government, in the Public Works Department, dated 3rd August 1859, No. 1863.

(Vide Public Works Proceedings from 30th July to 5th August 1859, Nos. 79 to 81.)

(Referring for consideration para. 20 of Colonel Cotton's letter of the 8th June, pointing out the importance of putting the Master Attendant's Department at Cocanada on a thoroughly efficient footing, both as respects salary, establishment, Boats &c.)

No. 2. ORDER THEREON, 6th August 1859, No. 368.

Communicated to the Superintendent of Marine. Government desire him, in reference to para. 20 of Colonel Cotton's letter, 8th June last, to report what arrangements are required to place the Master Attendant's establishment at Cocanada, in all respects on an efficient footing, and how far the Port Fund can be made available for the purpose.

(Signed) T. PYCROFT,
Chief Secretary.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following letters.

From Colonel A. COTTON, Commandant of Engineers; to J. D. BOURDILLON, Esq., Secretary to Government, dated 8th June 1859, No. 234.

When I was on my late tour in the north, the circumstances of the Port of Cocanada were strongly pressed upon my observation, and it seems advisable that I should request the attention of Government to the case.

2. In 1840-1 the exports of *Produce*, (that is excluding cloths 2,10,000 Rupees), was 90,000 Rupees from the whole Rajahmundry district, chiefly if not all from Coringa and Nar-sapoor, and little or none from Cocanada.

Lacs.

3. The average of 10 years preceding the new works was from the whole district.....	3½
Average from 1847 to 1850.....	9½
do. „ 1851 to 1854.....	14
do. „ 1855 to 1858.....	19
Exports for 1858-9.....	39

besides still a small export of cloth in the last year of 1 lac.

4. Thus the total exports of produce from the district has increased 11 fold in 13 years, and it has much more than doubled in two years.

5. The above are the Custom House valuations; I am informed that 25 per cent. may be added for the actual value, making the total exports in the past Fusly just 50 lacs, or half a million sterling.

6. The imports were last Fusly 17½ lacs including Treasure 10 lacs, making the whole trade of the district 77½ lacs or 775,000£. The export of rice was 50,000 tons, and of other things about 30,000 tons. The number of boats passing the lower locks on the two branches of the main canal, was 15,000 tons carried, including rafts, by estimate above 200,000 tons.

7. It must be observed that the land already watered has not yet by any means come into full production, and that about ½ a million acres remain to be irrigated in this Delta alone. Again, almost the whole of this produce has been grain and seeds; the sugar has not yet much extended, owing, I think, chiefly to the large profit on rice, accompanied with the low state of capital hitherto, and the vast demand for labour in the various works, private and public, connected with the change from dry to wet cultivation.

8. The sugar is, I hear, now extending, and I am of opinion that it will continue to do so. The value of 2 tons of sugar, the produce of an acre, may be taken at 500 Rupees, while that of 2 crops of rice is about 50 Rupees; so that, as sugar is substituted for rice, the value of the produce of the district will greatly increase.

9. Further, the Port of Cocanada must be the outlet for most of the produce of the Kist-nah Delta, on account of the great superiority of the harbour; and now that the completion of the Bezaorah and Ellore canal is put in hand, that Delta will be directly connected with Cocanada.

10. Again, the upper Godavery navigation is now fairly commenced; and by the locks in the 1st barrier, (which now enable boats to pass through it when the river is low,) the river is actually open to near Mahadepoor, 220 miles from the sea. It is impossible to calculate what the down trade in four such first rate staples as cotton, wheat, gingely, and linseed, produced in unlimited quantities, and at prices so extremely low, (cotton 2 dalb, wheat ½ a bushel, &c.), will become, but there is no probability of any thing preventing its becoming enormous, when

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the produce is conveyed in a few days at 2 or 3 Rupees a ton, against the present land carriage of 6 or 7 weeks to Bombay, at 70 or 80 Rupees cost.

11. Thus when

1st. The present irrigated land is more perfectly cultivated.

2nd. The remaining 500,000 acres of the Godavery Delta is irrigated.

3rd. When the whole Kistnah Delta is irrigated and most of its produce comes to Cocanada or Coringa.

4th. When the enormous trade exported from the upper Godavery begins to flow down to the same ports, we cannot expect less than that this trade, which has in so few years risen to $\frac{3}{4}$ million sterling, will in a very few years amount to 3 or 4 millions. Indeed, the produce of part of one Delta alone, having already raised the trade to $\frac{3}{4}$ million, we can hardly estimate that of the 2 Deltas alone, (3 times the present irrigated area), at less than 2 or 3 millions; which would be besides the upper Godavery trade.

12. Of the present trade of the district, a large proportion, (I have not the exact returns), is landed and shipped at Cocanada, on account of that place being nearer to the anchorage than Coringa, so that it has already become a large trading town.

13. Both these places must, however, now be expected to become first rate towns, and it seems absolutely necessary to take the matter into consideration with reference to the allotment of the ground, and all the questions connected with such places. Unless this is done systematically, there must be endless confusion.

14. I must also most particularly bring to the notice of Government, the very remarkable and alarming situation of these places, when a hurricane blows from a certain quarter. Twice in the times of the English, viz., in 1788, and 1838, the sea has been driven into the Bay with such force, as to rise greatly above its natural level, and submerge a large extent of country to such a depth, as actually to drown almost the whole population. One of the local officers told me he had buried more than 10,000 bodies on the last occasion.

15. This, therefore, must be kept in view in arranging about these towns, and the subject requires very careful investigation. I have thought of the following ways in which the difficulty might be met.

1st. By a sea embankment. This is the work that the Bengal Government have been constructing for many miles near Balasore, where the coast is liable to a similar calamity.

2nd. By making mounds of earth at certain intervals throughout the inundated country, for places of refuge for the inhabitants, with their most valuable effects. But this would alone be of course a very imperfect remedy, as it would leave all buildings not of brick in chunam, to destruction, and it also implies that the people who take refuge on the mounds would be exposed to the storm.

3rd. In certain parts of the towns, it might be enforced that all buildings should be of two stories, and the lower part to a certain height of brick in chunam, and with deep foundations.

4th. Long stone groynes might be run out, both from the shore and the Islands, so as greatly to contract the entrance to the Bay, and so prevent the sea rising so high as formerly. These would also shelter the harbour and make perfectly smooth water at the anchorage.

16. There will certainly be now continual applications for land for building in both places, but especially in Cocanada, and no time, therefore, should be lost in making the necessary arrangements.

17. I should suggest that an intelligent Officer, with the peculiar qualifications for such a duty, should be set apart for this, and directed in communication with the Collector, Engineer, Master Attendant, and merchants, Native and European, to draw up a plan for the arrangement of the buildings, wharves, &c., for the supply of water, drainage, &c., and for the terms on which land should be granted.

18. The port dues must, of course, be now rapidly increasing; and perhaps part of these might in the first instance be appropriated to meet the expense of this establishment, but there can be no doubt that ample funds will be provided for current expenses and for the interest of any large sums that may be required, in the price of land, ground rents, &c.

19. It seems of great importance that nothing should be any longer left to chance in such a case, and that cities of 50,000 or 100,000 inhabitants should not be allowed to spring up, which would be a disgrace to our rule, and in which no systematic precautions had been taken to provide for the health, peace, safety and comfort of the inhabitants, and for the convenience of so extensive a trade.

20. I beg also to point out the importance of putting the Master Attendant's Department on a thoroughly efficient footing, both as respects salary, establishment, boats, &c. Hitherto the salary has been so totally inadequate as literally hardly to afford him a subsistence, and it ought undoubtedly be sufficient to secure the services of a first rate Sailor, without his being under the necessity of entering into trade of any kind.

21. I may also suggest that preparation should be made in every respect for a Commissariat establishment, to provide for the effective landing and shipping and despatching into the interior of troops and stores for Nagpore and Central India; and also for Hyderabad, till the proposed works of the Irrigation Company, provide for their direct despatch from Madras, by the line of Kurnool and the upper Kistnah.

From Colonel A. COTTON, Commandant of Engineers; to J. D. BOURDILLON, Esq., Secretary to Government, dated 12th July 1859, No. 275.

On a former occasion I prepared a paper on the manufacture of salt on a large scale under European superintendence in Rajahmundry.

As the navigation of the Godavery is now fairly begun, it seems to me full time for the Government to take this matter into consideration.

The present price of salt in the interior, 4 or 500 miles from the coast, is quite sufficient to prevent its use to any thing like the extent that health requires. It is, indeed, a grievous thing to see a necessary of life, which God has so abundantly provided, so that in many places it is literally like sand on the sea-shore, (being produced spontaneously), placed by means of the two items of an enormous duty and as enormous a cost of carriage, beyond the reach of the great majority of the people in the interior. The salt that can be got for nothing or for a Rupee or two per ton on the coast, I found selling in the interior at 1 anna a pound, 15 times the price in England, and allowing for the difference in value of money, there, about 3 to 1, 120 times as dear as in England. All the way up the river, the first question continually put to us by the people on the banks was, will you bring us salt? a person can hardly conceive the eagerness with which the poor people enquired about this, and bought it when it was sold from the steamer a little below the usual price. If the present excessively severe duty is still to be levied, we can still, by a skilful system of manufacture and river transit, reduce the price in the middle of the country to less than $\frac{1}{3}$ of the present cost, and this alone will be an incalculable boon to the people. Even in wealthy England, it was decided that essential as salt was to health, it was bad economy to lay any duty at all upon it. How much more is it incumbent on our Government to do what can be done to reduce its cost in this poor country, where the people live entirely on vegetable food. I believe nobody who is accustomed to eat meat, can conceive the terrible longing for salt by those who live on grain. Dr. Livingstone's testimony on this point is very striking.

I may also observe how greatly such a blessing as this of cheap salt is calculated to bring home to the Natives the benefits of our rule.

Both mercy and policy, therefore, earnestly demand that we should lose no time in preparing for the supply of this vast tract of the basin of the Godavery and the adjoining country, with salt of the best quality and at the lowest price.

It is well ascertained that where the price of salt is sufficiently low, the consumption is very great among a people living upon grain; and probably it is used also to a considerable extent for cattle. At 15 lbs. a head, 15 millions of people, the number that I reckon would be supplied by the Godavery, would require 100,000 tons, yielding to Government, at the present rate of duty, 25 lacs a year in revenue, of which probably $\frac{3}{4}$ would be additional to the present revenue. This alone, 18 lacs a year, would be an enormous return for any sums that can possibly be spent on the river. I am, indeed, certain that the first year, a great deal more will be gained in new salt revenue than is spent in improving the river, if only sufficient salt and means of transit are provided.

I should also point out how completely the manufacture of salt on a large scale, under a superior European Officer will put an end to salt frauds.

In connection with those proposed works, salt depôts should, of course, be formed at every 20 or 30 miles on either bank of the river, all under the charge of an Officer, who should have a small steamer at his disposal, and visit the different depôts continually.

The following places might, in the first instance, be thus occupied, Koyidthe just W. of the hills, 60 miles from the annicut; Radrumcottah, opposite the mouth of the Savory; Budrachellum, Purnasala, above the first barrier; Monaypet, Enchampilly, at the 2nd barrier; Mahadoopoor, Chinnoor, at the mouth of the Wardah, and Chandah, also some point as far up the main Godavery as boats can go at present above the Wardah.

These depôts will be essential to prevent monopoly prices; and, by keeping down the price, encrease the consumption and the revenue.

The increased consumption of salt will be immediate, and will alone demand a very extensive flotilla to convey it. If a Steamer towed up 500 tons, and made a trip of 400 miles and back in a fortnight, it would take 8 powerful steamers, and 40 or 50 boats constantly working the whole year to take up 100,000 tons.

This is the scale on which we must be prepared to act, the moment we bring into use so powerful an agent as a large navigable river, flowing through a populous country.

I am happy to say the use of the river has fairly begun—about 40,000 Rupees worth of produce from Nagpore, (cotton and linseed), has been brought down, and 20,000 Rupees worth of wire and salt have been taken up; and I have no doubt, that if carriage is provided, several lacs of Rupees worth of goods will be conveyed by it this year.

I would put on it all the tug steamers sent out for the mud boats connected with the dredges, that can possibly be spared for it, as they will be a hundred times more valuable there than in towing the mud boats, leaving the latter to be worked by men.

There is a little steamer for sale for 2,500 Rupees at Cochin, which would be well suited for an Officer's boat, and it would be taken round to the Godavery in the fine weather.

I herewith have the honor to forward a short Memo., on a set of works for the manufacture of salt of superior quality on a large scale.

I cannot conclude without some further remarks on this great question of the Godavery navigation. While for ten years, the prosecution of this measure has been made a question of the expenditure of a few thousand or a lac of Rupees, it is, in the one point of salt revenue only, and that on the single article of salt, in reality a question of many lacs of Rupees a year. And the flotilla that is absolutely necessary to take up the salt, will bring down $\frac{1}{4}$ a million tons of the great staples, cotton, gingely, linseed, and wheat, giving an entirely new value to the whole produce of that fertile country, and producing such a revolution there, as it is impossible fully to comprehend.

There cannot be the least doubt that with this access to foreign markets, Nagpore could pay 100 lacs of revenue, instead of its present 40 lacs, and at the same time be ten times as wealthy a country as it now is. The following are the values of the five staples, at Cocanada,

at present, and the cost of the same obtained by adding the river transit to their cost, in Nagpore and Rajahmundry respectively; viz:—

	Cost.	Value.	Diff.
Salt per ton.....	37	108	71
Cotton.....	235	450	215
Wheat.....	20	105	85
Gingely.....	48	94	46
Linseed.....	37	98	61

If we take the average difference of cost and value of these articles at Cocanada at 80 Rupees a ton, the saving on 100,000 tons of salt taken up, and of 250,000 tons of produce taken down, would be 280 lacs or $2\frac{1}{2}$ million sterling and this is a bonâ fide saving, to be divided between the sellers, buyers and merchants. The profit on the produce brought down, as it could not materially affect the London market, would be all divided between the producers and the merchants; that on salt, if the Government establishes depôts, would all fall to the purchasers, the Government having the benefit of the increased amount of tax. And besides these main staples, there will be an immense trade in hemp, wax, lac, and various other products, both of the cultivated country and of the forest, besides the timber trade, which alone, when the river is opened and an end put to the oppression of the zemindars, will become an enormous trade. When to these we add a vast passenger traffic, some idea may be formed of the importance of this undertaking.

The above quantities certainly are not exaggerated. When we find an export of 40 lacs a year from 3 or 4,000 square miles in the lower Godavery, springing up in a few years, before the resources of that tract are one fifth part developed, we are certainly far from fully estimating at 250 lacs, the exports of 150,000 square miles of country, producing all the greatest articles of demand in England.

Salt for the Godavery Basin.

I think, including part of the Basins of the Mahanuddee and Nerbudda, and of Central India, not less than 15 millions of people will be supplied with salt by the Godavery and its affluents; and so cheaply, that I think we may reckon upon 15 lbs a head per annum being demanded, which would make a total demand of 100,000 tons from Rajahmundry, besides exports by sea.

The cost at Nagpore, for instance, I reckon would be, if prepared as below proposed.

	Per ton.
Manufacture, &c.....	1 Rupee.
Duty	25 Rs.
Carriage 500 miles at 2 pice per mile	6 ..
Sundries	5 ..
Total Rupees	37 per ton.

present price at Kamptee 110 Rupees, or more than 3 times the above estimated cost.

To provide this large quantity of salt, I would substitute the systematic manufacture of it on a large scale under European superintendence, for the present petty wasteful and imperfect mode adopted, by men who have neither capital nor mechanical skill, nor any idea of doing things on an extended scale.

I have no doubt that under very simple arrangement, salt can be made in any quantities perfectly pure and white, and delivered into boats for transport at 1 Rupee a ton.

A square mile of area contains 3 millions of square yards, and the evaporation of the dry months from November to May is about 5 feet of depth—allowing 4 feet, a square mile would evaporate 4 million cubic yards of sea water, containing $\frac{1}{4}$ cwt. of salt per cubic yard or 100,000 tons in all. A single square mile would thus evaporate sufficient sea water to yield the quantity required.

To raise this quantity of sea water, suppose 10 feet so as to spread it over land out of the reach of accumulations of fresh water, would require a 12 Horse Engine to work for 170 days, and would cost 2,000 Rupees a year, including interest. The water should be pumped either from the sea itself, or from some creek where it was as clear as possible, and be led by a channel to where it was to be evaporated. It should be first distributed over a larger area and when become nearly saturated brine, should be led through a filter into a smaller area, which should be carefully prepared, so that the salt could be collected from it perfectly clean. Rails should run through this area, and laid into large sheds, from which the salt might be discharged from rail waggons into boats lying in a canal cut through the works. Thus the only handling the salt would require would be the carrying a few yards from the evaporating ground and loading it into waggons, and again loading it into waggons inside the stores, when it was to be put in the boats.

It is evident that to spend 100,000 Rupees a year on as many tons of salt prepared in this way, would provide ample means of every kind, including interest on buildings, rails, &c.

It would not be necessary to store all the salt in buildings; most of it might be stored as at present, but it would be convenient to have considerable godowns, so that boats might be loaded in wet weather under cover.

I need not here enter into details respecting the arrangement of these works.

ORDER THEREON, 3rd August 1859, No. 1863.

The former of the papers above recorded proposes measures for the improvement of the port and town of Cocanada; the latter for the management of the salt trade of Rajahmundry, under the rapid enlargement likely to be produced by the opening of the Godavery for navigation.

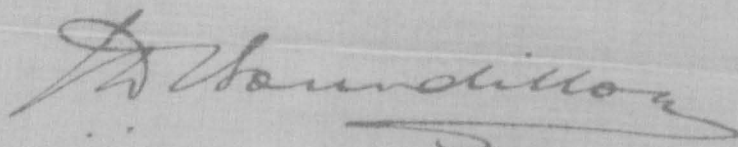
2. The Governor in Council has read both papers with interest, and agrees generally with both. He resolves now as a preliminary step, to appoint an officer to the special duty of considering and reporting the details necessary for carrying Colonel Cotton's views on both subjects into effect; and he has resolved to select Captain J. F. Stoddard, Executive Engineer in the Godavery Division, for this important task. Captain Stoddard will be relieved from other duties, and his place in the Department will be supplied temporarily by another Officer; but he will draw his departmental pay and allowances, pending further orders, as a special and extra charge.

3. Captain Stoddard will be at liberty to proceed up the Godavery, so far as that may be necessary to enable him to judge of the arrangements proper in regard to the salt trade, and the District Engineer will be instructed to give him all the aid in his power to enable him to do so.

4. Captain Stoddard's enquiries will not extend to the revision of the Master Attendant's Department; but para. 20 of Colonel Cotton's letter of the 8th June will be communicated to the Marine Department for the consideration of that question.

5. Ordered to be communicated to the Chief Engineer together with copy of the two letters recorded above, in order to the necessary instructions being issued to Captain Stoddard and the District Engineer. Colonel Bell will be requested to propose the name of an Officer to be appointed to occupy Captain Stoddard's place in the Department.

(True Extract.)



Secretary to Government.

To Colonel Cotton.
To the Chief Engineer.
" Marine Department.
" Accountant General.
" Civil Auditor.

Exd. Wm. Thomas.

Proc. of Genl. 12 Aug. 1859. Report

Proceedings of Govt in the
Public Courts Sept. 1859.

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Sept. 1/59.

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Referring for consideration
para 20 of General Cotton's
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With and Order.

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N^o 3702 6 Aug. 1859.

Communicated to the Super-
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The Superintendent.

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