

EAST INDIA.

COPIES of a LETTER from Major *Arthur Cotton*,  
transmitting a REPORT on the IRRIGATION, &c.  
of the RAJAHMUNDRY District; and of the  
REPORTS and other Papers on the same Subject.

(*Lord George Bentinck.*)

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Ordered, by The House of Commons, to be Printed,  
11 March 1850.

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[*Price 9d.*]

127.

*Under 12 oz.*

D26, 8. 262. M5  
From the Calcutta Review <sup>4847</sup>  
of October 1847. No.

ON

## EMBANKMENTS OF THE RIVERS OF BENGAL.

THE general question of embanking rivers is one of vast extent, and though of great magnitude, yet of such delicacy, that even any particular case requires much investigation to enable an Engineer who has had long experience, in addition to the adequate talents, to decide upon the best mode, and to estimate the cost and results, of conducting such an operation. It is not proposed, therefore, in this paper to attempt to show all the bearings of the question in respect to the Rivers of Bengal; but the Report, lately printed by the Committee appointed by Government to enquire into the matter, seems to call urgently for remarks from any one who may be at all conversant with such subjects.

The questions offered for the consideration of the Committee by Government were, we find, dated the 14th August 1846, and the Report of the Committee to Government is dated the 15th September following; the Committee therefore accomplished their work in one month, and came to a full decision in that time, recommending to Government, without qualification, the destruction of 3,000 miles of River Bunds, and the entire abandonment of the whole system which had been in operation for a long series of years. At the first view of the case, therefore, one would naturally conclude that the Members of the Committee were *either thoroughly acquainted with the whole extent of country protected by the embankments, and also men of great talents and experience in such questions*, so that having all the statistics of the tract before them, and the whole subject at their fingers' ends, they could decide the question at once with confidence and safety; or that they were in every way unequal to such an investigation, and almost altogether void of the smallest perception of its difficulties, or of the vastness of the consequences of their decision. It seems impossible that anybody can consider this case, and see such a question disposed of in a month;—a question involving, not only the property, but the lives of a dense population occupying many thousand square miles of country,—without concluding that one of these two suppositions must be correct. Let us examine the Report with a view to decide.

The Report begins by disposing of the whole question of confining the waters of rivers on general principles, proving most satisfactorily in half a dozen paragraphs, that not the rivers of Bengal only, but that all rivers should be left unconfined. We are not going to follow the example of the Committee by attempting to settle such a question within the limits of this paper; but we may remark, that the conclusion is reached by a very simple and indeed not uncommon process; viz. looking at one side only. Certain disadvantages are mentioned as arising out of the system of confining rivers, and

an instance is quoted in the rivers of Italy ; but on the other side of the question not one glance is bestowed ; not the smallest atom of credit is conceded to a system in which so much money has been expended, and under which the country has flourished ; and not even the most trivial advantage is allowed to have been derived from it. Nothing is shown but a dead weight of disasters, without the slightest counterpoise in the shape of benefit. A man is at a considerable expense in building and repairing his house, and after all there is a possibility of its falling upon his head ; but against the disadvantage of this danger he sets the advantage of having a shelter from the sun and rain, and people seem generally to have come to the conclusion that upon the whole it is better to have a house to live in. The conclusion seems to be about equally general in civilized countries, that it is better not to let rivers wander about through the length and breadth of the land, as they think proper. The world may have been mistaken in this point, but such a question at least requires a thorough estimate of the actual amount both of advantages and disadvantages, before a system which has universally commended itself to the inhabitants of civilized countries is abandoned.

Further, as to the professional opinions, &c., passed in this portion of the Report, every position, taken up and established so summarily, is open to attack ; but it is not, as before stated, intended to attempt to go into the professional details of the question.

The Report next proceeds to speak of the origin of these Bunds. It states, that people instinctively built Bunds to keep the water from their lands, and so far, no doubt, it is right. Just in the same way men instinctively build roofs over their heads to protect them from the rain ; the distinction between those who are acquainted with physical science and those who are not, seems unnecessary. It traces it to the fears and cupidity of individuals, or, in other words, to their anxiety to save their lives and properties. If all that is done in the world from such motives were to be destroyed, there would be but little left.

The paragraphs 12 to 17 are very important ; they speak of the mal-construction of the Bunds, of " their vicious locality, and total deficiency of level corresponding with that of the country they ought to protect ;" of " their being so low that the floods go over them on the first unusual rise ;" of " large portions of the river being without embankments," &c. They thus show that the question is not simply, whether Bunds are upon the whole advantageous in this tract, but whether the disadvantages said to arise from them are not wholly or principally owing to their having been constructed without any uniform plan, and by persons without professional knowledge or sufficient means. There are many disadvantages connected with the present state of the Native Town of Calcutta, which a town, laid out upon an original and scientific plan, and built by regular architects, and of proper materials, would not have had. In the latter case, nine-tenths of the fires, cholera, &c. from which it at present suffers, would be avoided. But even with all the inconveniences arising from the denseness of the population, the materials of the houses, and the impurity of the streets, it is not considered advisable to burn it down, and let the people return to a state of nature.

The second section of the Report professes to consider the effects of the embankments on the country ; but, as before stated, in this part of the investigation, there seems to be an unintentional omission ; viz. of all the advantages that have arisen from the Bunds. Statements are referred to, which show that the Bunds have altogether cost 115 rupees a mile per annum, including the remission to Zemindars on the lands injured by floods ; but state-

ments of the property and revenue *saved* by all the Bunds that did *not* give way, and of the improvement in property, population, and revenue, arising from the protection afforded by the Bunds, miserable and imperfect as they are, are not given. Perhaps it may be said, that the advantages are so extensive and diversified that it was impossible to show them in a simple tabular statement, or even to calculate them at all with any approach to correctness,—and this may probably be the case; but it would still have been satisfactory to have shown, that, at all events, the advantages were ten times the amount of the disadvantages. This might perhaps have been done without much difficulty; in such a case, for instance, as that while the Government expenditure had been 3½ lakhs a year, the revenue was at least 35 lakhs more than it would have been, had the country been always left at the mercy of the river inundations.

In this section also, the rate of the rise of the beds of several rivers during a period of seven or eight years is shown, terminating in 1827: but what conclusions can be drawn from this we are left to guess; for 1st, What the rise *would* have been, had the Bunds not existed, is not shown, nor do the Committee attempt to form a judgment on that most essential point. 2nd. It is not stated what the rise has been during the last twenty years. 3rd. The Committee *believe* that the rivers have not continued to rise at that rate, and therefore that the increase of sand is *rather apparent than real*: this is a question however that should be decided rather upon realities than appearances. Are there no better data than such as these procurable? Is there nothing known about the progress of the deposits in the beds of the rivers during the last twenty years?

In the fourth section the Report professes to show the effects of leaving rivers without Bunds. No precise statements are given; only some general assertions are made, such as, that in a certain year of inundations some districts with bunded rivers suffered more than others whose rivers were not bunded; but, as no actual and tangible statement of the property in each case destroyed is given, no inference can be drawn from such assertions. The question is not, whether under certain peculiar circumstances the one had the advantage over the other, but whether upon the whole, and in a series of years, the results are for or against a certain system. In a hurricane a beggar who has no shelter to live under may escape, while a rich man is killed by the falling of his house; but this does not decide the question against the building of houses. Nobody can come to any sound conclusion from such general assertions as these: nothing but complete statistical returns of the revenue, population, &c. of the different districts for a series of years, accompanied by a close and enlightened investigation of the various causes which have affected them, made by competent persons, can enable any one to come to a satisfactory decision on the question.

The fifth section speaks of the fertilizing effects of the flood waters, of which there can be no doubt; but cannot this be secured without leaving the floods uncontrolled? The idea mentioned, that the water let in upon the lands by sluices has benefited them, seems to be a tolerably correct one. If the water that overflows, where there are no Bunds, fertilizes, it is evident enough that the same water would not be spoiled by passing through a sluice: only there is this vast difference between the two cases, that if the water is admitted by sluices, just so much as will be beneficial may be let into the fields, and the rest excluded;—whereas without Bunds and sluices, whether the crop is to be improved or drowned, is left to the flood's will and pleasure, the owner of the field being helpless.

It is stated that the lands between the Bunds and the rivers are highly valuable, and that the Zemindars would gladly have the Bunds removed a mile from the river: but, 1st, This is because the Zemindars are not Engineers, and do not know that the removal of the Bunds would not have the effect they suppose. In rivers without Bunds, the kind of rich soil which is found immediately on the edge of the rivers does not extend to an indefinite distance from them, but is confined to a very narrow space. In the delta of the Godavery there is just the same difference between the land on the bank of the river, and that a mile off, where the river has never been embanked, as there is in other deltas where it has. 2ndly, Is there no medium between letting the river flood range where it will, and allowing none of it to flow over the land? Must a man have a house either without walls or without doors? Who would dream of building Bunds without sluices to admit as much water as was desirable, if he understood how, and had the means? 3rdly, If the Bunds are placed far from the edges of the rivers, they must be made with greatly increased sections, as the ground falls as you retire inland; and moreover in that case the land near them on the river side will be so submerged as to drown any crops even in moderate floods.

The concluding remarks of this section require some notice. It is said that the transport of the sand necessarily depends upon the velocity and volume of the currents, and that whatever contributes to the latter, tends to increase the former. Compare this with the 28th paragraph, where the Committee state, that, in their opinion, the rising of the beds of the rivers is owing to the bunding system; by the Bunds the depth, and consequently the velocity and volume of the currents, would be increased in the channels of the rivers, and therefore the deposits in their bed should be more rapidly carried off. What would have become of the additional deposits left in the beds of the rivers during a series of years, as mentioned in the third section, if the volume and velocity of the currents in the channel had been diminished by the water spreading over the country, for the beds of the rivers are formed of sand, and the Committee (para. 35) say that it may be taken as proved that the sand would be carried over the country?

The sixth section speaks of some particular Bunds, apparently the only ones the Committee visited. In remarking on those of the Damúda they prove so much, that the whole argument nullifies itself. It makes out that the Bunds are not wanted to keep out salt water, and that they are not wanted to keep out fresh water; so that the inhabitants have put themselves to the expense of constructing embankments for which there was neither real nor apparent necessity. This is incredible! As a proof that they are not wanted in the freshes, it is stated, that the ryots cut them to let the water in;—had one of the members of the Committee, either through ignorance, or want of funds, built walls to his house without doors, he would probably rather break a hole through them, than not have the means of getting in or out. Were the poor people furnished with sluices to their Bunds, they would not be at the risk and trouble of cutting more; but of course, any thing is better than losing the fertilizing effects of the water altogether.

In the 37th and 38th paragraphs, mention is made of a particular breach, and the conclusion arrived at is, that nothing can resist the natural tendency of the rivers to find the easiest channels. There certainly are floods at times in all countries, the height of which is so great that the cost of providing against them would be more than the property at stake is worth; but certainly no greater mistake could possibly be made than to suppose that rivers in deltas cannot be generally retained in their channels, and that too,

at comparatively a most trifling cost. In the delta of the Cauvery, in the Madras Presidency, there has been no material change of the course of any river for a long series of years, excepting where it was diverted purposely by the engineer; though it is of course necessary to watch them continually, and frequently to apply remedies where they show a tendency to wander from their proper course.

The 39th and 40th paragraphs further show the miserable state of the Bunds, and the gross neglect of this most important subject hitherto.

After examining the Report thus far, could it be believed that the next paragraph should contain the desperate recommendation that the whole system of Bunds should be abandoned, and this by a Committee deeply impressed with the responsibility of their duties? Surely a more reckless conclusion was never arrived at on such grounds.

After a month's investigation, without one single enquiry into the former and present state of those districts, as respects their population, revenue, the amount of property in them now and formerly,—without any one statement that could show whether, upon the whole, the districts had improved or not under the system,—without one return from which a judgment can be formed of the effect of abandoning a system under which, and dependent upon which, the whole present state of things in these districts has been formed,—the Committee simply recommend the reversal of it.

It does not require a professional man to see that before deciding a question of this vast extent, upon which depend the lives and property of millions, and revenue to the amount of crores, the following points should have been decided:—

1st. What was the state of these districts in respect of population, property, and revenue, as far back as can be traced, compared with the same at the present time?

2nd. How far is the difference between these two attributable to the bunding system?

3rd. Have the districts upon the whole therefore improved or not under this system; and to what extent compared with the expenditure?

4th. How far are the disadvantages of any kind arising from the Bunds to be attributed to the confessedly imperfect way in which they have been constructed, without unity of design, sufficient means, or professional knowledge?

5th. What would have been the probable present state of the districts had no attempts ever been made to restrain the floods?

6th. What would have been their present state, had the Bunds been constructed as parts of one grand scheme, planned and carried out by competent professional engineers, with adequate means at their disposal?

7th. What would be the probable cost and effect of substituting a well planned and systematic series of Bunds, provided with sluices and all other necessary appendages, for the present miserable and disgraceful patch-work?

Surely any intelligent person, whatever his profession may be, can see that to decide upon such a question as this, without these points at least being satisfactorily settled, would be desperate trifling with the very lives of the population. The Committee only recommend a return to a state of nature. In a state of nature the island of Van Diemen's Land supported miserably 600 inhabitants; when improved by a civilized population it will support probably three millions. A return to a state of nature not only implies a return to the

state in which a district was formerly, but also the destruction of the population that has sprung up under an artificial state of things.

To assist us in judging what would be the result of such an investigation of this subject in regard to the Bengal rivers, we may take as nearly a similar case as we can find, for which *we have some data*.

The deltas of the Cauvery and Godavery in the Madras Presidency will both be of use in this way.

That of the Cauvery first came under the management of our Government about the year 1800. There were some partial Bunds to the rivers at that time, and they were taken care of by our Government from the first: but in 1818-19 severe floods occurred, which did such extensive mischief, that the subject was pressed more closely upon the Government, and happily, instead of returning to a state of nature, a more intelligent and vigorous system of management than the previous one was adopted: by degrees the Bunds were raised, and strengthened, and provided with the necessary sluices and other masonry works, till they were placed in a tolerably efficient state, so that for the last twelve or fifteen years no serious breach has taken place; and under the shelter of these embankments the people have felt that security which has encouraged them to carry out the improvements of their estates to a very considerable extent.

Nothing can possibly be more satisfactory than the whole result of this system of management, the very foundation of all being the Embankment of the Rivers, without which it was impossible that any man could feel secure of reaping the fruits of his labour and expenditure. It will be seen by the statistical return which accompanies this article, that, including all the improvements in the embankments, irrigation and communication, the sum of Rs. 39,00,000 has been expended in forty-five years, or at the rate of 86,000 per annum,—and that during that time the Revenue has increased from Rs. 31,40,000 to Rs. 49,30,000, being a total increase of Rs. 17,90,000, per annum; so that with this expenditure of Rs. 86,600, of which probably not more than one fourth, or Rs. 22,000 per annum, has been laid out upon the Bunds, the district has improved in respect of Revenue to the extent (at present) of Rs. 18,00,000 per annum, or altogether to 415,00,000 in forty-six years. The population has also increased in the same time from 8,00,000 to 13,00,000, or at the rate of 10,700 per annum.

Supposing for a moment that the Government could be insane enough to destroy the Bunds, there can be no doubt that the district would speedily return to the state in which it was in 1800, or rather much below it,—involving the destruction of five lakhs of people; but more bayonets than pickaxes would be required to effect the destruction of the Bunds. There is not a man, black or white, Civilian, Engineer, or Ryot, in any way acquainted with this delta, that has any doubt as to the necessity of Bunds, or that they are the foundation of the wonderful prosperity of this tract. But it must be remembered that they have been improved under regular systematic professional management,—under the eye of able Revenue Officers, who have made themselves thoroughly acquainted with the district, and have carefully watched the progress of the works and their effects. Yet they have been carried on under many disadvantages: for instance, there was formerly only one engineer in a division which contained five collectorates; and even latterly there has been seldom more than one officer, never more than two, in a division consisting of two collectorates: so that the professional supervision has been by no means proportioned to the extent of the operations and the amount of expenditure, which has been about two lakhs a year for the divi-

sion. With respect to the levels of the beds of the rivers, some management has certainly been necessary, some having at times fallen too low, and some having risen too high; but so completely have the means to correct these tendencies answered, that upon the whole the regulation of the beds has been steadily improving, and they have never been in so good a state as they are at present. The tendency of the rivers to wander has also been effectually counteracted, and the idea of permitting one to take a new course is never entertained for a moment. A very severe flood, far above what has been experienced for half a century, would no doubt do most extensive mischief, far beyond what it would do if the district were in a state of nature; but it must needs be so;—a fire in Calcutta now, would do much more mischief than it would have done when the town consisted of a few huts.

Upon the whole therefore it is undeniable, that in this case the bunding system has been productive of nothing but prosperity, and that to an astonishing extent, without one disadvantage other than what is of necessity connected with all improvement, that is, that in proportion as prosperity and population increase, so must the extent of mischief be great under certain circumstances.

The statistical table of the Revenue, &c. of this district seems to require some further remarks in connection with this subject.

It is not meant that the Bunds were the sole cause of these splendid results; but it is certain that they are an essential, and indeed the fundamental part of the system of works required to secure the vast amount of produce of which a delta is capable. After able civil management, the next thing is the control of the water. The works for this are,—

1st. The embanking of the rivers, to secure the lands from being drowned when they ought to be covered with crops.

2nd. Channels, to lead the water to and from the land, that is, to secure the irrigation and drainage of every part.

3rd. Masonry works, such as sluices, drains, aqueducts, tunnels, &c. to regulate the distribution of the water, the levels of the beds of the rivers, &c.

4th. Communications, without which a delta country is worse off in some respects than poorer tracts.

An examination of the table will show in a most striking manner the results of such a system of works in a delta. Let them be compared with those of a district left in a "state of nature," or with one in which the Bunds have been built, without sluices, without plan or skill or sufficient means, and where the rivers have been allowed to choose new channels for themselves in any direction they thought proper. The seasons are as irregular now, and the floods as severe, as they were fifty years ago; yet we find that, whereas at the beginning of that period the produce fluctuated forty-two per cent. in a period of five years, it has steadily become more regular and certain, till the variation has diminished to three per cent., while the average produce has increased fifty-four per cent.; so that the least produce of any year of the last period, is upwards of twenty-five per cent. more than the greatest of the first period.

The total expenditure to obtain these ends has been on an average Rs. 86,600 per annum; but during the last ten years it has amounted to Rs. 1,13,000 per annum, because several new, large, and important works have been executed during that time, such as two large weirs across the Colleroon,



&c., the full effects of which have not yet been developed. The expenditure, therefore, which has been required, both to keep the original works in repair, and to pursue a system of improvement, has been about two per cent. upon the revenue, while the revenue has increased nearly 40 per cent. per annum.

If any person, who was sceptical on the subject of the advantages of Bunds, were to make one journey through this district, he would probably be satisfied at least that they were not universally injurious. Perhaps no tract in the world presents such a picture of fertility. The whole delta, of which Tanjore is the principal part, contains about  $1\frac{1}{2}$  millions of people, or perhaps five hundred to the square mile. Yet, as a delta it has not such remarkable natural advantages, the river which waters it not being very regular in its supply, and in some years having no large quantity of water in it: indeed in 1836 there was an almost total failure of the main freshes for more than three months; so that were it not for the strict economizing of the water, the main crop would occasionally be lost entirely; and on the other hand, but for the Bunds, the whole district would at times be submerged, and the entire crop be destroyed by the floods.

The results in this district are of immense importance, if duly considered. They show what might have been made of this country generally, had European science, capital, and energy been applied to it, as they ought to have been. The increase of revenue is a very good test of the prosperity of the people, besides showing how abundantly the Government might have been supplied with money for all the expenses of the state. The total collections during this period of forty-six years, *above* what they would have been had the district remained stationary, as the remaining portion of that presidency has, is four hundred and fourteen lakhs, or four millions sterling. The prosperity of the people is shown also by the value of land: about ten years ago it was found, by an average of many sales of estates, that the land sells for about forty rupees an acre, so that the saleable value of the lands must have been about four millions sterling at that time; and it is probably much more now.

The state of the delta of the Godavery in the Rajahmundry district, which has been *without* Bunds till within the last few years, and in which they are yet in a most imperfect state, will, on the other hand, show the consequence of *neglecting* these most essential works. It is a delta of vastly superior natural advantages to Tanjore; the soil is much superior on an average; the river in the worst years contains water enough to secure two crops, on two or three such tracts; and it has a large body of water in it throughout the dry season. The statement of revenue shows at one time an increase to the extent of about twenty-two per cent., and then a decline; so that it is now scarcely above what it was forty-five years ago. This is the revenue of the whole district, of which a large portion is not in the delta of the Godavery. The collections in this delta are now about thirteen lakhs, while those of the Cauvery (a delta of the same extent but inferior natural advantages) are about fifty lakhs, or nearly four times as great. The population of the latter being also, as stated, about thirteen lakhs, while that of the former is under four lakhs. Some progress had been made in the last five years towards effectually bunding the river; and the Court of Directors have now sanctioned a plan, including the complete embanking, irrigating, and draining of the delta, at an estimated cost of twelve lakhs.

For the satisfaction of those to whom the present subject is one of deep interest, we may here subjoin the *statistical statement, the result of which has*

now been given, showing the collection of Land Revenue, &c. in the District of Rajahmundry:—

Years.	Total Collection.	Average of each 5 years.	Years.	Total Collection.	Average of each 5 years.
	RS.	RS.		RS.	RS.
1803	20,60,000		1824	25,80,000	
1804	15,90,000		1825	23,40,000	
1805	20,80,000		1826	25,10,000	
1806	20,50,000		1827	23,60,000	23,90,000
1807	21,50,000	19,90,000	1828	24,90,000	
1808	20,40,000		1829	23,40,000	
1809	21,40,000		1830	23,60,000	
1810	25,90,000		1831	20,80,000	
1811	21,10,000		1832	19,10,000	22,40,000
1812	26,50,000	23,10,000	1833	26,70,000	
1813	23,90,000		1834	26,40,000	
1814	22,70,000		1835	19,60,000	
1815	18,70,000		1836	21,50,000	
1816	23,70,000		1837	21,40,000	23,10,000
1817	23,40,000	22,50,000	1838	17,30,000	
1818	23,40,000		1839	17,20,000	
1819	22,50,000		1840	17,40,000	
1820	21,50,000		1841	21,10,000	
1821	22,90,000		1842	19,60,000	18,50,000
1822	22,50,000	22,60,000	1843	17,30,000	
1823	21,80,000		1844	17,70,000	

By such statistical tables as those which we have given, the effects of a certain system of management may be judged of: no conclusion whatever can be possibly formed from a mere statement of what it has cost to keep it up. If a man were to ask his friend whether he did not think it were a pity to lay out ten rupees a year upon the repairs of his house, he would probably request, before giving his opinion, to be informed what the value of the building was, on which he was laying out such an annual sum in repairs. For all that appears in the Report, the amount of property at stake may be a hundred times the amount expended in the Bunds, or it may not equal it. The district may have been annually improving to any extent under the shelter of the Bunds, miserably imperfect as they are, or they may have been constantly retrograding; and even were it shown in the Report that they had become impoverished, it would remain to show by some actual and tangible statement, not by "We are of opinion," and "We believe,"—

1st. That such deterioration is owing to the Bunds, &c.

2nd. That it is owing not merely to the Bunds as they are, but to the bunding system itself; that is, that if the Government had constructed an efficient system of Bunds, on sound engineering principles, provided with the necessary sluices, &c. for admitting the water and regulating the beds and courses of the rivers, the district would still have been injured by them.

Till these points are proved nothing is done. As to the Bunds having cost one hundred and fifteen rupees a mile per annum, it says nothing at all, either for or against them. The question is, not what any thing costs absolutely, but what it costs in comparison of its real worth. Further; the Report says, "that such catastrophes (the breaching of the Bunds) have not arisen from any want of an ample expenditure by the Government to keep the Bunds in an efficient state." In the first place, not one proof of any kind is given to show that one hundred and fifteen Rs. a year is ample to keep the Bunds in order; and if an opponent were therefore to meet this by a simple

counter-assertion, that it would require three times as much to keep them up, he would be on as good ground as the Committee. But every part of their own Report flatly contradicts this assertion. The following are the expressions used in the Report on this point—"Their malconstruction, vicious locality, and deficiency of level corresponding with that of the country they ought to protect;"—"The disjointed nature of the Bunds, and the large extent of the different portions of the several rivers remaining without embankments;"—"It appears that these Bunds were constructed bit by bit, and apparently without any, or very little reference to the general level of the country;"—"A uniform system of bunding the rivers had never been thought of," and as we are informed by one of themselves this patchwork exists in the Damoodah embankments, &c.;"—"Their uncertain levels and irregular construction;"—"One portion of the Bunds three feet above the river, while the adjoining one is overtopped and breached,"—"On several of the rivers the Bunds are now, whatever they may once have been, so low and intermixed with the Zemindary Bunds, that the floods go over them at the least unusual rise." If it should be said that still money enough has been expended by Government, there can be only one alternative left us; viz. that the officers in charge of the embankments were so totally unfit for their charge, that the money in their hands has been worse than thrown away.

In whatever way it is taken, as the Report itself stands, no conclusion against the bunding system can be formed from such a document. What can be expected of a ship that is originally viciously constructed and on false lines, commanded by a man ignorant of navigation, not half equipped, her cordage rotten, masts in the wrong places, and in every respect unseaworthy? and what should we think of a man arguing from the danger he had met with in sailing in her, that we had better return to a state of nature, and either stay on shore, or go to sea on a log of wood?

All that we learn from the Report is,—

1st. That the Bunds have been originally constructed in an imperfect manner in every respect.

2nd. That they have cost one hundred and fifteen Rs. a mile per annum.

3rd. That they are not kept in order.

4th. That they are constantly overtopped and breached.

Scarcely one of the essential points in the inquiry is even touched upon. Were the Committee called upon to report on the operations of a Banking Company for a given series of years, and to give an account of the actual position of its affairs, some such statement as the following might probably be put forth as the result of their labours to awaken the unsuspecting Shareholders to a conviction of their impending fate:—

"A statement of the operations of the Húgly Banking Company from 1835-36 to 1844-45 inclusive, being a period of ten years:

Capital (not ascertained.)		Amount lent on security of		
Deposits ditto.		landed property, Co.'s Rs.	19,73,558	12 4
Profit and Loss account ditto.		Charges in Trade.....	14,77,891	15 9
		Co.'s Rs. ....	34,51,450	12 1
Actual position of the affairs of the Húgly Banking Company, September 15, 1846.				
Loss on the Bank's operations during the last 10 years.....			34,51,450	12 1
Probable result of further operations (not ascertained.)				

Your Committee feel satisfied from the above statements that the system on which this establishment is conducted is an unsound one, and fraught with the most serious evils to the Proprietors, and do not hesitate for a moment to recommend that the whole system be immediately abandoned."

The question however is in itself no joke. The lives and property of the inhabitants of a tract of most fertile land, protected by 3,000 miles of river bank, and the Government Revenue derived from it, are no trifles, and call most loudly for the most decided measures on the part of Government to secure their protection. Is it possible that there is not in the Presidency one man to be found, able to grapple with this question, not one member of the Civil Service, not one Engineer, competent to conduct an efficient inquiry into the respective branches of this most important question? Is there nobody even that knows already, without any farther inquiry, whether upon the whole the districts have thriven or retrograded under the bunding system, or who could show on unanswerable grounds that an expenditure of ten times the sum stated, if placed at the disposal of competent persons, would produce an abundant return to Government, and bring these districts into such a state of fertility and prosperity, as would exceed their present state as much as that of Tanjore does its state fifty years ago? People in general, indeed, who have not witnessed it, cannot easily imagine what a delta is capable of being brought to, or what prodigious returns it will yield to a liberal and skilful system of management, when a well digested system of works is carried out, for controlling the floods, distributing the water, regulating the level of the beds and courses of the rivers, and draining the land. A complete system of roads with bridges, and, if possible, internal navigation also, are of course necessary to give full effect to the improvements in the management of the water.

But those who have witnessed such operations and their results, know that, so far as the welfare of a people and the security of the existing Government depend upon wealth and plenty, there is nothing which a Government can do that will more effectually secure them, with the same amount of expenditure, than such an improvement of delta lands. Is it not a dishonour to our Government that such important works should have been so long left in such a confessedly disordered state, as if there were neither funds nor engineering knowledge forthcoming to put them to rights, while they are absolutely necessary to the development of the vast resources of one of the most fertile tracts of country in the world, and where every well-directed effort will certainly be so abundantly rewarded?

A little consideration of this matter will enable any one to perceive that close examination of the merits of this Report is of the greatest importance, not only in respect of the point which it discusses, but also in reference to other questions of still greater national importance.