

Confidential

P.W.C. No 5240

1063 W of 9-4-88
1064

No 1663 W of 6th June 1888

B

Ordered that four
copies of the list
be forwarded to the
Government of India

H.R. No 1664 W of 6th June 1888

Forwarded

mem
31.5.88

Jm
2/6/88

Jm
2/6/88

Second
7/6/88
To the Secy. to the Govt. of India
Ind 18/6- with 4 copies of list
with 10 copies of list
0. 31.5.88 12.6.88

P.W.C. No 5087

From
The Supg. Engineer,
Fourth Circle.

No 1663 W of 6th June 1888
1664

Dated 28th May 1888.

By 31.5.88

No 201
EW

Encl: 1
(75.5.88)

Return of Public Military
Buildings in the West
Coast Divⁿ for the year
ending 31st March 1888

Forwarding 6 print-
ed copies of slip of alter-
ations & additions to—

With order

1063
1064

Confidential

P.M.C. No. 5249

P.M.C. No. 4984

1657 W. of 6th June 1888

From,

The Superintending Engineer
II Circle is authorized to institute

The Suptg. Engineer,
2nd Circle.

a suit against G. Venkata-
chellam Pantulu as proposed.

To,

The Chief Engineer,
P. W. Deptt.

2. The correspondence will
be communicated to the Super-
intending Engineer I Circle, in
view to Mr De Morgan being
called upon to submit such
explanation as he can offer
with respect to his alleged
responsibility; also to the Examiners
P. W. Accounts, in view to the
accountants named being
required to submit their replies
to the charge of carelessness
made against them.

Dated 26th May 1888

Ry 29. 5. 88

No. 508 Kd.

1657 W. of 6th June 1888

Venkatachellam Pantulu - G.
Supplier of materials to the
late Gudivada Division.
Requesting sanction to institute
a suit against — for the
recovery of Rs 1081 which he
owes to Government.

29. 5. 88

31/5/88

S.E. II Circle
S.E. I Circle

Examiners P.W. Accounts.

31/5/88

29/5/88 25/5/88 23/5/88 21/5/88 19/5/88 17/5/88 15/5/88 13/5/88 11/5/88 9/5/88 7/5/88 5/5/88 3/5/88 1/5/88

With order

I found to be incorrect and incomplete, and after vainly endeavouring for some weeks to obtain a correct and satisfactory one, upon which I could act, I was obliged to detach on special duty his Assistant Accountant to investigate & go through the accounts both in the Eastern Division Office, and in the office of the Gudwada Sub Division, which process took him a month owing to the confused state of the records, & the careless manner, in which the initial accounts, such as, tin day reports & work abstracts, had been compiled. A complete statement as far as could be ascertained from these accounts is now before me showing a sum of Rs 673 due to and of Rs 1754 due from Contractor.

3. Excess payment of over Rs 600 was made to the Supplier. He seems to have been paid twice over for lime supplied by him. The bill on which the 2nd payment was made was prepared by the late Gudwada Division Accountant, Bhagyanatha Pillay from the Measurement Book. When bills are so prepared in the Division Office from the original Measurement, it is usual

to score across the entry in red ink, & note underneath, the number and date of the Cheque, in which payment was made. This does not appear to have been done by his predecessor, accountant Subharaayudu Pantulu, who prepared the bill on which first payment was made, and so his successor may have been misled, but a reference to the work Abstract would have shown him that the lime had already been paid for. Both accountants should be reprimanded not only for this carelessness in this particular, but also principally for the very unsatisfactory manner, in which the initial accounts have been kept. Mr De Morgan was the Executive Engineer, when these transactions took place & he is of course primarily responsible.

4. Besides the above, the supplier has failed up to date to deliver 191 Cans of lime made over to him as a Carrier by the Division Officer, Western Delta on Mr De Morgan's requisition, over 15 months ago, and this lime, he has sold for his private profit. He owes money for punts & their crews, which had been hired out to him by the Eastern Delta

Division Office on the requisition of Mr. De Morgan. These are the principal items, which call for notice.

5. The Supplier attended my office about 5 weeks ago at my request. He admitted the non-delivery of the lime. (He could not well do otherwise, as we hold his receipts for it) but stated that Government was in his debt nevertheless, as he was not paid for all the materials supplied by him, and talked about some thousands of rupees as being due him. I told him to submit a statement of his claims, but he said he could not do so, as his partner ran away with all the accounts. About 3 weeks ago, I wrote him to attend my office again to try & induce him to come to a settlement, but he excused himself from attendance on the plea of ill-health. He has put forward no claims beyond the general one that Government is indebted to him. He has given no assistance whatever in the compilation of the statement of his affairs. As he has

has been supplying materials for the last four or five years to the Gudwada Division it is possible that there may be some more money due him, but the accounts do not shew it and unless he formulates specific claims, it is impossible to investigate them. I am of opinion that the statement now made out shews all claims and Counter claims Correctly -

6. I will instruct the Division Office to notify to him that unless he pays up the amount due before 1st of July next, proceedings at law will be taken against him.

I have the honor to be

Sr

Your most obed^t Servant

Hannan
Superintending Engineer
at Circle

SUPD. ENGR. OFFICE
NO. 388
25 MAY. 88
P. W. D.
FOURTH CIRCLE

P.W.D. 4984

12/1657 W. of 6 June 1888

The Superintending Engineer
II Circle is authorized to institute
a suit against G. Venkata-
chellam Pantulu as proposed.
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responsibility; also to the Examiners
P. W. Accounts, in view to the
accountants named being
required to submit their replies
to the charge of carelessness
made against them

From,
The Suptg. Engineer,
2nd Circle.
To,
The Chief Engineer,
P. W. Deptt.

Dated 26th May 1888.
R. 29. 5. 88

No 508 R.S.

12/1657 W. of 6 June 1888

Venkatachellam Pantulu - G.
Supplier of materials to the
late Gudivada Division.
Requesting sanction to institute
a suit against — for the
recovery of Rs 1081 which he
owes to Government.

W. of 29. 5. 88
M. H.
31/5/88

S.E. II Circle
S.E. I Circle
Examiners P.W. Accounts.
29/5. 2. 5. 1722
31/5/88
2/6

Withthorpe

Step of alterations and additions

Annual Return of Public Buildings in the West Coast Division for the year ending 31st March 1888.

DATED 21st May 1888.

ACCOMMODATION—NATURE AND DESCRIPTION OF BUILDINGS.

MISCELLANEOUS BUILDINGS.										PERMANENT.					GARRISON.		
Number of buildings.	Name of buildings.	For what number of men constructed.	Number of men in occupation.	Nature of buildings.			External Dimensions.		Arm of Service.	Normal.	Value.	Total.	Date of erection or purchase.	Name of regiment in occupation.	Actual on 1st April 1888.		
				Walls.	Floors.	Roofs.	Doors.	Length.	Breadth.								
1	3	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
<i>Malabar District Calicut Taluk Imperial Military.</i>																	
22	Covered passage between Medical Officers' Quarters and Officers' Mess room West Hill Barracks, Calicut.	...	...	Wooden posts.	Gravel	Thatched.	...	141	10	1410	0-1-1	97	...	1887	Royal Fusiliers.		
23	Ash pit West Hill Barracks Calicut.	..	...	Laterite stone in chunam	...	...	...	3	3	9	0-6-6	24	...	1887	do.		
24	Temporary sheds for the Commissariat Cattle at Calicut.	...	...	Erool wood posts.	Gravel	Thatched.	Bamboo	183	10	1830	3-13-9	487	...	1887	do.		
25	Godowns attached to Married quarters converted into cook room West Hill, Calicut.	...	...	Laterite in chunam.	Concrete.	Tiled	...	131	131	1751	0-3-2	35	...	1886	do.		
26	Temporary shed for Commissariat Mules and bullocks at the Elephant lines, Calicut.	...	...	Tatty	Earth	Thatched.	Bamboo tatty.	290	25	7250	0-1-1	502	...	1887	do.		
12	Regimental Store shed at Quilon.	...	...	Laterite in chunam.	Asphalte.	Tiled	Panel	103	40	4120	1-12-4	7298	...	1887	22nd Regt. Madras Infantry.		
<i>Chemical Taluk store at Cannanore.</i>																	
<i>Ernad Taluk.</i>																	
28	Infection disease ward	...	...	Laterite.	do.	Tiled	do.	43	43	1849	1-6-11	2647	...	1887	Royal Fusiliers.		
29	Block No. 2 Barrack	...	...	do.	Asphalte.	do.	Panel and venetian.	258	54	18959	2-7-5	34404	...	1887	do.		
29	Wash house	...	...	do.	Asphalte.	do.	do.	66	191	1287	1-8-3	1952	...	1887	do.		
29	Latrine	...	...	do.	Jelly and clay.	do.	Nil.	41	15	615	3-1-4	1900	...	1887	do.		

Executive Engineer's Office,
West Coast Division,

Calicut, 21st May 1888

Col. R. E.,
Executive Engineer.

Dep of alterations and additions

Annual Return of Public Buildings in the West Coast Division for the year ending 31st March 1888.

DATED 21st May 1888.

ACCOMMODATION—NATURE AND DESCRIPTION OF BUILDINGS.

Number of buildings.	Name of buildings.	For what number of men constructed.	Number of men in occupation.	NATURE OF BUILDINGS.				PERMANENT.			GARRISON.			
				Nature of buildings.			Doors.	Length.	Breadth.	Plinth area.	Arm of Service.		Total.	Date of erection or purchase.
				Walls.	Floors.	Roofs.					European Infantry and Native Infantry.	Rate per superficial foot.		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	<i>Malabar District</i>													
	<i>Calicut Taluk</i>													
	<i>Imperial Military.</i>													
22	Covered passage between Medical Officers' Quarters and Officers' Mess room West Hill Barracks, Calicut.	...	...	Wooden posts.	Gravel	Thatched.	...	141	10	1410	0-1-1	97	...	1887
23	Ash pit West Hill Barracks Calicut.	..	...	Laterite stone in chunnam.	...	...	...	3	3	9	0-6-0	24	...	1887
24	Temporary sheds for the Commissariat Cattle at Calicut.	...	...	Erool wood posts.	Gravel	Thatched.	Bamboo	183	10	1830	3-13-9	437	...	1887
25	Godowns attached to Married quarters converted into cook room West Hill, Calicut.	...	...	Laterite in chunnam.	Concrete.	Tiled	...	134	134	1754	0-3-2	35	...	1886
26	Temporary shed for Commissariat Mules and bullocks at the Elephant lines, Calicut.	...	...	Tatty	Earth	Thatched.	Bamboo tatty.	290	25	7250	0-1-1	502	...	1887
12	<i>Quilon.</i> Regimental Store shed at Quilon	...	...	Laterite in chunnam.	Asphalte.	Tiled	Panel	103	40	4120	1-12-4	7298	...	1887
94	<i>Cherical Taluk.</i> Cook house converted into wood store at Cannanore.	...	...	Do.	Concrete.	Do.	Batten	12	12	144	0-10-1	91	...	1887
	<i>Ernad Taluk.</i>													
28	Infection disease ward <i>Malappuram</i>	...	...	Laterite.	do.	Tiled	do.	43	43	1849	1-0-11	2647	...	1887
29	Block No. 2 <i>Barrack.</i>	...	...	do.	Asphalte.	do.	Panel and venetian.	2584	54	13959	2-7-5	34404	...	1887
29	Wash house	...	...	do.	Asphalte.	do.	do.	66	194	1287	1-8-3	1952	...	1887
29	Latrine	...	...	do.	Jelly and clay.	do.	Nil.	41	15	615	3-1-4	1900	...	1887

Executive Engineer's Office,
West Coast Division,

Calicut, 21st May 1888

Officer Col. R.E.,
Executive Engineer.

No 201
W.

From

Supg. Engineer's Office IV Circle,
Camp Barru, 28 May 1888.

Colonel J. Beatty, R.E.,
Superintending Engineer,
Fourth Circle.

To

The Chief Engineer
P. W. Department

Sir,

Enclosures 6

In continuation of my letter No 118
dated 31st March 1888, I have the honor to
forward 6 printed Copies of Slip of Alterations
and Additions to the Return of Public Military
buildings in the West Coast Division for the
year ending 31st March 1888.

I have the honor to be,

Sir,

Your most obed^t Serv^t,

J. Beatty - Colonel R.E.
Superintending Engineer
IV Circle.

AP

It is believed that the line will be found to be by no means a costly one, and I trust that funds will be provided and a survey staff entertained in time to commence a working survey of the line early in July next.

OOTACAMUND,
7th May 1888.

(Signed)

C. J. SMITH, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Railway Branch.

ORDER—dated 10th May 1888, No. 390 R., Public Works.

Ordered to be forwarded to the Government of India, in continuation of letter No. 339 R., dated 26th April 1888, on the same subject:—

(Here enter No. 391 R., dated 10th May 1888.)

(True Extract.)

(Signed)

C. J. SMITH, Colonel R.E.,
Joint Secy. to Govt., P.W.D.,
Railway Branch.

To the Consulting Engineer for Railways.

„ Chief Engineer for Irrigation.
„ Public Works Department, General Branch.
„ Collector of Vizagapatam.

„ Revenue Department, with copies of P.G. No. 159 R.,
dated 25th February 1888; P.G., No. 302 R.,
dated 18th April 1888; and P.G. No. 338 R.,
dated 26th April 1888.

Exd. F. R. Bantleman.
Spare Copies

I have to add that the Chamber will feel much obliged by your putting this letter before Government with a view to some action being taken to remedy the state of matters which has obtained during the past season,—a state of matters a continuance of which must result in ruining the trade of a port which, excepting Colombo, has the only safe harbour on the coast of India between Calcutta and Bombay, and moreover is a port which, with justice done to it, will play an important part in developing the trade of the country.

Endorsement by W. A. HAPPELL, Esq., Collector of the Godáviri District, dated Cocanada, 22nd February 1888, No. 93.

Submitted to the Secretary to the Commissioners of Land Revenue for submission to Government as requested by the Chamber.

2. The failure of the eastern delta head lock at Dowlaishweram in 1886 reduced the trade of Cocanada by about 31 lakhs.

3. There was a breach in the Ellore canal last year by which traffic was stopped for three weeks. The western delta head sluice was also allowed to silt up, and the canals had to be closed to clear it out. Both these stoppages of traffic were unforeseen, and could not be provided for when merchants' contracts were made. So, many persons doubtless suffered heavy loss from this cause.

4. I agree with the Chamber that the proper terminus for the lines of railway mentioned is Cocanada. Nearly all the export trade which passes through Bezvada, whether from Guntur or from Hyderabad territory, comes to Cocanada for shipment. The state of the Kistna canal is worse even than the Chamber state it to be. When I was Collector of Kistna, Local Fund contractors refused to undertake to convey heavy material along the canals after the middle of January, because heavily-laden boats were liable to be brought to a standstill by accumulations of silt in certain parts of the canals. There is not sufficient water in the Kistna to keep the canals open for effective navigation after the beginning of March, even if the difficulties in regard to silt could be overcome at a reasonable expense. On the other hand, there is always sufficient water for navigation in the Godáviri, and if it was worth while to incur the expense of dredging, the canals could be kept open all the year round.

5. When the delta works are completed, it will not be necessary to close canals for more than two or three weeks each year, even if the present system of removing silt is adhered to. It would therefore be very advantageous to trade if the *ad interim* terminus of the Hyderabad railway were fixed at Ellore instead of Bezvada. The Godáviri canal system meets the Kistna system at Ellore.

6. The railway could be carried on to Cocanada without bridging the Godáviri. There is water from bank to bank throughout the year at Dowlaishweram, so that trains could be taken across by steam ferry without difficulty. Colonel Hasted and Mr. Walch, to whom I made this suggestion some years ago, both agreed that it was quite feasible.

Resolution—dated 14th March 1888, No. 246.

Submitted for the orders of Government.

(A true Copy and Extract.)

(Signed)

R. S. BENSON,
Acting Secretary.

No. 2284, Revenue.

Transferred to the Public Works Department (Irrigation and Railway Branches).

(By Order.)

(Signed)

H. A. STUART,
Under-Secretary.

OOTACAMUND,
17th April 1888.

From G. T. WALCH, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 11th April 1888, No. 159 G.D.

With reference to your No. I/22 G.D., dated 21st March 1888, I have the honor to say that if all the head sluices, their floors, aprons, &c., are each year to be thoroughly examined, as wisely ordered after the collapse of the central delta sluices, a closure of the canals for some appreciable period in each year is an absolute necessity. That period in the eastern division in which lie the canals from the Godáviri to Cocanada is generally three weeks, but sometimes a month, and considering that a bund has to be put in the river to shut off water from the sluices, that a large mass of silt has to be removed from the front floor and aprons to admit of their thorough examination, that there are always repairs to be done to shutters, piers, floors and rear aprons, and that then the bund in the river has to be removed, I consider the shorter period named is the very least that will suffice, whilst the longer (one month) will sometimes be necessary, as in this year, when two new vents have to be built to the head sluices during the closure.

2. In the western division the period of closure is generally six weeks, because, in addition to the examination of the head sluices, there are on the long (47 miles) main line of canal to Ellore many things to be done in the way of repair of aqueducts and other masonry works and clearance of silt, especially at the behind end of the canal near Ellore lock. This closure of the Ellore canal may doubtless, with good management and a considerable extra cost for dredging, be kept down, if considered necessary, to generally one month. It should be remembered that the closure takes place only during the time that the Kistna canals are perforce, from want of water, closed, and therefore no produce is coming forward from Bezvada.

3. Of course, during the closures much clearance of silt is done in the canals, because it can be done cheaper and, especially in lock channels, much better by hand than by dredgers, but the apparent belief of the Chamber of Commerce that the closures are entirely, or even chiefly, on account of silt clearance is an erroneous one; if no silt clearance was done by hand, closures of, at all events, nearly as long as those now usual would be necessary.

4. As regards the oft-suggested arrangements "by which both canals hence (Cocanada) to Dowlaishweram need not be closed at the same time," the question is simply, would the advantage to be gained, viz., the keeping open water-traffic from the Godáviri river to Cocanada for an extra three weeks or a month in each year warrant the great cost? In considering this it must be remembered that from Rajahmundry to Cocanada there are two excellent roads, one of which passes through Dowlaishweram, and runs along side the Sámalkót canal. There would be no real engineering difficulty in providing an independent head for the Sámalkót canal, but the cost would be great not only because the excavation for the channel would have to be deep, but because separate head sluices on the river, if not also a separate lock, would be necessary, if thorough examination of head sluices had to be carried out as now, and it would be folly, indeed, to give up such examinations.

5. As your Memorandum under reply only calls for remarks regarding the closure of canals, I do not, in this letter, go into other questions raised by the Chamber of Commerce, but enclose a memorandum (which I trust you will not think out of place) on the subject of the through canal-traffic of the Godáviri district and the advisability of supplementing it by extension of the railway from Bezvada to the Godáviri river.

ENCLOSURE.

MEMORANDUM.

CANALS for the combined purposes of irrigation and navigation, with special reference to such canals in the Godáviri district and the necessity for providing other means of traffic between the Kistna and the Godáviri.

It may be accepted as an axiom in canal engineering that the requirements of irrigation and navigation are conflicting, e.g., for irrigation large quantities of water, and consequently of

silt, have to be taken into a canal, and therefore the slope of the surface must be considerable; for navigation, the less water taken into the canal, the better, and its surface should have no slope; for irrigation there are times when the canal should be kept low, so that large quantities of surplus water may not have to be passed into the drainages when they are already filled by rain-water; for navigation the canal should always be kept up to its full level; for irrigation, even when the river or other source of supply is low, it is often necessary to go on letting as much water as possible out of the canal to supply crops, thereby reducing the level and the depth in the canal, especially at its end; for navigation at such times the water should be kept in the canal to maintain as nearly as possible its full depth.

2. The canals of the Godávári delta are primarily for irrigation; they have been made also navigable to supplement their usefulness, and never has there been a more successful combination. Its very success, however, now threatens, especially on the through lines, to cause the secondary object of the canals to over-top and seriously interfere with the primary one.

3. The clashing of the irrigation and navigation requirements mentioned in para 1 is well exemplified on the Ellore canal, which is the through line of communication between the Kistna and the Godávári river. On that canal considerable silting, inevitable when large quantities of water have to be passed through a canal from a silt-bearing river, frequently impedes traffic, whilst the necessity for keeping sufficient water for heavily-laden boats leads at times to more water being taken into the canals and surplussed out, and at other times to less water being given out of the canal to its distributaries than suits the irrigation; and it is a fact that much tempting and perfectly possible extension of irrigation from near the end of the canal has to be foregone, because it would still further add to the already great difficulty at times of keeping the navigation going.

4. On this (Ellore) canal especially the staff of this department has to attempt to serve the two antagonistic interests with the inevitable result that neither is satisfied. The one that has for its mouth-piece the powerful commercial community of Cocanada can best make its voice heard in high quarters, but district officers know that the other has much to say from an entirely different point of view.

5. The truth is that up to a certain point of development of traffic the conflicting interests can be fairly well reconciled but not beyond, and that point has already been reached on the Ellore canal; what then will be the case when to the existing and increasing general traffic along that canal is added the canal traffic to Cocanada?

6. There is but one solution to the difficulty, viz., the provision of other good means of communication between Bezvada and the Godávári river. At present there is not even an ordinary road. The extension of the railway from Bezvada to the Godávári nearly opposite Rajahmundry is exactly what is needed. It would, if run just above the system of canals, be an exceptionally easy line to make; it would pass along a well-populated and thriving country, which would give it a large passenger traffic; and it would bring large quantities of agricultural produce as well as coal to a point from which, except for a month in the year, it could be boated to Cocanada. It would form the first section (complete in itself) of the line which doubtless before very many years will be carried along the coast to join the Bengal system of railways at Puri.

(Signed) G. T. WALCH,
Superintending Engineer, I Circle.

From the same officer, dated Dowlaishweram, 17th April 1888, No. 184 G.D.

As an addendum to my memorandum with my No. 159 G.D., dated 11th April 1888, I have the honor to say that in the official year 1887-88 there passed through the Dowlaishweram head lock 20,065 boats and 1,736 rafts and through the Vizeshweram lock 24,254 boats and 2,943 rafts.

No. 71 I.

Note by the Chief Engineer for Irrigation.

With reference to endorsement No. 2284, dated 17th April 1888, transferring Resolution of the Board of Revenue, No. 246, dated 14th March 1888, forwarding an endorsement by the Collector of Godávári on a letter from the Chairman of the Cocanada Chamber of Commerce regarding the closure of the canals in the Godávári and Kistna deltas, I forward a report from Mr. Walch, the Superintending Engineer of the I Circle, and to state I fully agree with him.

2. In the Godávári district the main lines of communication are—

- (1) the canal from Ellore to the south side of the Godávári river; and,
- (2) that from north side of the river to Cocanada.

As a rule, the closure of the first lasts six weeks, that on the second line, three weeks or a month. I do not consider that on these lines a system of efficient dredging, as proposed by the Chamber, would shorten the closure sufficiently to justify the cost, as three weeks is, I consider, the least time that can be allowed for the thorough examination of the floors, aprons, &c., of the head-works, and a curtailment of the closure of the canal from Ellore to the Godávári to three weeks would be of little or no use, as the Kistna canals cannot, owing to want of water, be kept open; as this is the case, the result would not justify the cost.

3. If a new separate head and lock were made for the Sámalkót canal, water-communication, except in very bad years, could be maintained all the year round between the Godávári at Dowlaishweram and Cocanada; the cost of this would be very great, and I do not consider the extra three weeks' navigation would be worth the cost, especially as there is a good road available.

4. With regard to the Kistna canals we have three main lines of communication:

- (1) From Bezvada to Ellore.
- (2) Do. Bezvada to Masulipatam.
- (3) Do. Bezvada to Buckingham Canal.

These canals are closed, as a rule, for three months in the year, and putting aside the necessity of closing the canals for the clearance of silt (which in the Kistna delta is a most serious item) and for repairs, the water-supply in the river Kistna is not sufficient to maintain water in the canals in ordinary season certainly for more than ten months in the year, if as long.

5. With systematic dredging of the main canals on the Bezvada side, I believe that, with comparatively a small extra outlay, these canals, Bezvada to Masulipatam and Bezvada to Ellore, could be kept open in good and most ordinary years ten months, to the great advantage of trade, but more than this cannot be hoped for. Enquiries regarding this are being made and information being collected, and it is hoped that a definite proposal regarding this may be made hereafter.

6. In conclusion, I will add that I agree with Mr. Walch in advocating a line of rail from Bezvada to the south side of the Godávári river.

OOTACAMUND,
2nd May 1888.

(Signed) H. R. MEAD, Colonel, R.E.,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

No. 125 D.

Transferred to the Joint Secretary to Government, Public Works Department, Railway Branch, with reference to the Revenue Department's endorsement No. 2284, dated 17th April 1888.

OOTACAMUND,
5th May 1888.

(Signed) H. R. MEAD, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

NOTE.

The extension of the broad gauge line from Bezvada to the south bank of the Godávári cannot, in my opinion, be long deferred.

It would not only secure for itself a paying traffic, but would extend the trade of Cocanada.

It is believed that the line will be found to be by no means a costly one, and I trust that funds will be provided and a survey staff entertained in time to commence a working survey of the line early in July next.

OOTACAMUND,
7th May 1888.

(Signed)

C. J. SMITH, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Railway Branch.

ORDER—dated 10th May 1888, No. 390 R., Public Works.

Ordered to be forwarded to the Government of India, in continuation of letter No. 339 R., dated 26th April 1888, on the same subject:—

(Here enter No. 391 R., dated 10th May 1888.)

(True Extract.)

(Signed)

C. J. SMITH, Colonel R.E.,
Joint Secy. to Govt., P.W.D.,
Railway Branch.

To the Consulting Engineer for Railways.

„ Chief Engineer for Irrigation.

„ Public Works Department, General Branch.

„ Collector of Vizagapatam.

„ Revenue Department, with copies of P.G. No. 159 R.,

dated 25th February 1888; P.G., No. 302 R.,

dated 18th April 1888; and P.G. No. 338 R.,
dated 26th April 1888.

Exd. F. R. Bantleman.

Spare Copies

RAILWAY.

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PUBLIC WORKS.

Dated May, 10th.

Recd.

Encl.

G.O., 10th May 1888, No. 390 R.

B/c 1654 15.8.5/6/88

MAY.

Recorded

21.8.88

10/88

**Closure of Canals in the
Godavari and Kistna
Deltas**

Correspondence relative to the injury to traffic arising from the — and the extension of the line of railway from Bezvada to the Godavari, ordered to be forwarded to the Government of India.

10TH MAY 1888, No. 390 R., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Railway.

Read the following papers:—

Proceedings of the Board of Revenue (Land Revenue), dated 14th March 1888, No. 246.

H. S. THOMAS, Esq., F.L.S., F.Z.S.

Read—the following letter from J. M. BRYCE, Esq., Chairman, Cocanada Chamber of Commerce, to the Collector of the Godavari District, dated Cocanada, 3rd November 1887:—

I have the honor to acknowledge receipt of your No. 984 of 25th ultimo, handing statement of intended dates of closure of canals, and asking for any remarks the Chamber may have to make on same.

Presuming the closures are unavoidable, the Chamber thinks it unnecessary to offer any special remark on the mere dates of closure, but it may not be out of place to refer here to the utter inadequacy of the means of transit of produce from the interior of such a very rich produce country to its natural outlet which is Cocanada, and the consequent restriction placed on trade.

The closures referred to mean that at least from 1st April till end of May communication between Ellore and Cocanada, as far as transit of produce is concerned, is virtually closed, while, owing to the canal between Bezvada and Ellore being, as a matter of fact, unnavigable from end of February or beginning of March till middle of June, Cocanada is for at least four months of the year without means of getting delivery of certain kinds of produce; take, for instance, an article of such large production as castor-seed, the trade in which, as in other articles, would, there is little doubt, be very considerably increased, were it not for the want of proper means of communication with the interior.

While the Chamber is of opinion that by a system of efficient dredging the necessity for closing the canals and interfering with business every year for so long a time might, as far as removing silt is concerned, to a great extent, be avoided, and that some means might be adopted by which both canals hence to Dowlaiswaram need not be closed at the same time.

Merchants have got to look on the annual stoppage of communication at a time when large quantities of produce ought to be coming forward as unavoidable, and calculations have hitherto been made accordingly; but prolonged interruptions, such as have occurred during the past two seasons owing to breaches, siltings, &c., resulting in heavy losses, must inevitably have a highly-hurtful effect on the trade of this port.

What I have written points to what this Chamber considers the mercantile community would not be unreasonable in asking, viz., that Government should consider the advisability and practicability of connecting Cocanada by railway with Bezvada, where the lines of the Bellary-Kistna State Railway and the British section of the Nizam's Guaranteed State Railway Company converge.

I have to add that the Chamber will feel much obliged by your putting this letter before Government with a view to some action being taken to remedy the state of matters which has obtained during the past season,—a state of matters a continuance of which must result in ruining the trade of a port which, excepting Colombo, has the only safe harbour on the coast of India between Calcutta and Bombay, and moreover is a port which, with justice done to it, will play an important part in developing the trade of the country.

Endorsement by W. A. HAPPELL, Esq., Collector of the Godáviri District, dated Cocanada, 22nd February 1888, No. 93.

Submitted to the Secretary to the Commissioners of Land Revenue for submission to Government as requested by the Chamber.

2. The failure of the eastern delta head lock at Dowlaishweram in 1886 reduced the trade of Cocanada by about 31 lakhs.

3. There was a breach in the Ellore canal last year by which traffic was stopped for three weeks. The western delta head sluice was also allowed to silt up, and the canals had to be closed to clear it out. Both these stoppages of traffic were unforeseen, and could not be provided for when merchants' contracts were made. So, many persons doubtless suffered heavy loss from this cause.

4. I agree with the Chamber that the proper terminus for the lines of railway mentioned is Cocanada. Nearly all the export trade which passes through Bezvada, whether from Guntur or from Hyderabad territory, comes to Cocanada for shipment. The state of the Kistna canal is worse even than the Chamber state it to be. When I was Collector of Kistna, Local Fund contractors refused to undertake to convey heavy material along the canals after the middle of January, because heavily-laden boats were liable to be brought to a standstill by accumulations of silt in certain parts of the canals. There is not sufficient water in the Kistna to keep the canals open for effective navigation after the beginning of March, even if the difficulties in regard to silt could be overcome at a reasonable expense. On the other hand, there is always sufficient water for navigation in the Godáviri, and if it was worth while to incur the expense of dredging, the canals could be kept open all the year round.

5. When the delta works are completed, it will not be necessary to close canals for more than two or three weeks each year, even if the present system of removing silt is adhered to. It would therefore be very advantageous to trade if the *ad interim* terminus of the Hyderabad railway were fixed at Ellore instead of Bezvada. The Godáviri canal system meets the Kistna system at Ellore.

6. The railway could be carried on to Cocanada without bridging the Godáviri. There is water from bank to bank throughout the year at Dowlaishweram, so that trains could be taken across by steam ferry without difficulty. Colonel Hasted and Mr. Walch, to whom I made this suggestion some years ago, both agreed that it was quite feasible.

Resolution—dated 14th March 1888, No. 246.

Submitted for the orders of Government.

(A true Copy and Extract.)

(Signed)

R. S. BENSON,
Acting Secretary.

No. 2284, Revenue.

Transferred to the Public Works Department (Irrigation and Railway Branches).

(By Order.)

(Signed)

H. A. STUART,
Under-Secretary.

Ootacamund,
17th April 1888.

From G. T. WALCH, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 11th April 1888, No. 159 G.D.

With reference to your No. I/22 G.D., dated 21st March 1888, I have the honor to say that if all the head sluices, their floors, aprons, &c., are each year to be *thoroughly* examined, as wisely ordered after the collapse of the central delta sluices, a closure of the canals for some appreciable period in each year is an absolute necessity. That period in the eastern division in which lie the canals from the Godáviri to Cocanada is generally three weeks, but sometimes a month, and considering that a bund has to be put in the river to shut off water from the sluices, that a large mass of silt has to be removed from the front floor and aprons to admit of their thorough examination, that there are always repairs to be done to shutters, piers, floors and rear aprons, and that then the bund in the river has to be removed, I consider the shorter period named is the very least that will suffice, whilst the longer (one month) will sometimes be necessary, as in this year, when two new vents have to be built to the head sluices during the closure.

2. In the western division the period of closure is generally six weeks, because, in addition to the examination of the head sluices, there are on the long (47 miles) main line of canal to Ellore many things to be done in the way of repair of aqueducts and other masonry works and clearance of silt, especially at the behind end of the canal near Ellore lock. This closure of the Ellore canal may doubtless, with good management and a considerable extra cost for dredging, be kept down, if considered necessary, to generally one month. It should be remembered that the closure takes place only during the time that the Kistna canals are perforce, from want of water, closed, and therefore no produce is coming forward from Bezvada.

3. Of course, during the closures much clearance of silt is done in the canals, because it can be done cheaper and, especially in lock channels, much better by hand than by dredgers, but the apparent belief of the Chamber of Commerce that the closures are entirely, or even chiefly, on account of silt clearance is an erroneous one; if no silt clearance was done by hand, closures of, at all events, nearly as long as those now usual would be necessary.

4. As regards the oft-suggested arrangements "by which both canals hence (Cocanada) to Dowlaishweram need not be closed at the same time," the question is simply, would the advantage to be gained, viz., the keeping open water-traffic from the Godáviri river to Cocanada for an extra three weeks or a month in each year warrant the great cost? In considering this it must be remembered that from Rajahmundry to Cocanada there are two excellent roads, one of which passes through Dowlaishweram, and runs along side the Sámalkót canal. There would be no real engineering difficulty in providing an independent head for the Sámalkót canal, but the cost would be great not only because the excavation for the channel would have to be deep, but because separate head sluices on the river, if not also a separate lock, would be necessary, if thorough examination of head sluices had to be carried out as now, and it would be folly, indeed, to give up such examinations.

5. As your Memorandum under reply only calls for remarks regarding the closure of canals, I do not, in this letter, go into other questions raised by the Chamber of Commerce, but enclose a memorandum (which I trust you will not think out of place) on the subject of the through canal-traffic of the Godáviri district and the advisability of supplementing it by extension of the railway from Bezvada to the Godáviri river.

ENCLOSURE.

MEMORANDUM.

CANALS for the combined purposes of irrigation and navigation, with special reference to such canals in the Godáviri district and the necessity for providing other means of traffic between the Kistna and the Godáviri.

It may be accepted as an axiom in canal engineering that the requirements of irrigation and navigation are conflicting, e.g., for irrigation large quantities of water, and consequently of

silt, have to be taken into a canal, and therefore the slope of the surface must be considerable; for navigation, the less water taken into the canal, the better, and its surface should have no slope; for irrigation there are times when the canal should be kept low, so that large quantities of surplus water may not have to be passed into the drainages when they are already filled by rain-water; for navigation the canal should always be kept up to its full level; for irrigation, even when the river or other source of supply is low, it is often necessary to go on letting as much water as possible out of the canal to supply crops, thereby reducing the level and the depth in the canal, especially at its end; for navigation at such times the water should be kept in the canal to maintain as nearly as possible its full depth.

2. The canals of the Godávári delta are primarily for irrigation; they have been made also navigable to supplement their usefulness, and never has there been a more successful combination. Its very success, however, now threatens, especially on the through lines, to cause the secondary object of the canals to over-top and seriously interfere with the primary one.

3. The clashing of the irrigation and navigation requirements mentioned in para 1 is well exemplified on the Ellore canal, which is the through line of communication between the Kistna and the Godávári river. On that canal considerable silting, inevitable when large quantities of water have to be passed through a canal from a silt-bearing river, frequently impedes traffic, whilst the necessity for keeping sufficient water for heavily-laden boats leads at times to more water being taken into the canals and surplussed out, and at other times to less water being given out of the canal to its distributaries than suits the irrigation; and it is a fact that much tempting and perfectly possible extension of irrigation from near the end of the canal has to be foregone, because it would still further add to the already great difficulty at times of keeping the navigation going.

4. On this (Ellore) canal especially the staff of this department has to attempt to serve the two antagonistic interests with the inevitable result that neither is satisfied. The one that has for its mouth-piece the powerful commercial community of Cocanada can best make its voice heard in high quarters, but district officers know that the other has much to say from an entirely different point of view.

5. The truth is that up to a certain point of development of traffic the conflicting interests can be fairly well reconciled but not beyond, and that point has already been reached on the Ellore canal; what then will be the case when to the existing and increasing general traffic along that canal is added the canal traffic to Cocanada?

6. There is but one solution to the difficulty, viz., the provision of other good means of communication between Bezváda and the Godávári river. At present there is not even an ordinary road. The extension of the railway from Bezváda to the Godávári nearly opposite Rajahmundry is exactly what is needed. It would, if run just above the system of canals, be an exceptionally easy line to make; it would pass along a well-populated and thriving country, which would give it a large passenger traffic; and it would bring large quantities of agricultural produce as well as coal to a point from which, except for a month in the year, it could be boated to Cocanada. It would form the first section (complete in itself) of the line which doubtless before very many years will be carried along the coast to join the Bengal system of railways at Puri.

(Signed) G. T. WALCH,
Superintending Engineer, I Circle.

From the same officer, dated Dowlaishweram, 17th April 1888, No. 184 G.D.

As an addendum to my memorandum with my No. 159 G.D., dated 11th April 1888, I have the honor to say that in the official year 1887-88 there passed through the Dowlaishweram head lock 20,065 boats and 1,736 rafts and through the Vizeshweram lock 24,254 boats and 2,943 rafts.

No. 71 I.

Note by the Chief Engineer for Irrigation.

With reference to endorsement No. 2284, dated 17th April 1888, transferring Resolution of the Board of Revenue, No. 246, dated 14th March 1888, forwarding an endorsement by the Collector of Godávári on a letter from the Chairman of the Cocanada Chamber of Commerce regarding the closure of the canals in the Godávári and Kistna deltas, I forward a report from Mr. Walch, the Superintending Engineer of the I Circle, and to state I fully agree with him.

2. In the Godávári district the main lines of communication are—

- (1) the canal from Ellore to the south side of the Godávári river; and,
- (2) that from north side of the river to Cocanada.

As a rule, the closure of the first lasts six weeks, that on the second line, three weeks or a month. I do not consider that on these lines a system of efficient dredging, as proposed by the Chamber, would shorten the closure sufficiently to justify the cost, as three weeks is, I consider, the least time that can be allowed for the thorough examination of the floors, aprons, &c., of the head-works, and a curtailment of the closure of the canal from Ellore to the Godávári to three weeks would be of little or no use, as the Kistna canals cannot, owing to want of water, be kept open; as this is the case, the result would not justify the cost.

3. If a new separate head and lock were made for the Sámalkót canal, water-communication, except in very bad years, could be maintained all the year round between the Godávári at Dowlaishweram and Cocanada; the cost of this would be very great, and I do not consider the extra three weeks' navigation would be worth the cost, especially as there is a good road available.

4. With regard to the Kistna canals we have three main lines of communication:

- (1) From Bezváda to Ellore.
- (2) Do. Bezváda to Masulipatam.
- (3) Do. Bezváda to Buckingham Canal.

These canals are closed, as a rule, for three months in the year, and putting aside the necessity of closing the canals for the clearance of silt (which in the Kistna delta is a most serious item) and for repairs, the water-supply in the river Kistna is not sufficient to maintain water in the canals in ordinary season certainly for more than ten months in the year, if as long.

5. With systematic dredging of the main canals on the Bezváda side, I believe that, with comparatively a small extra outlay, these canals, Bezváda to Masulipatam and Bezváda to Ellore, could be kept open in good and most ordinary years ten months, to the great advantage of trade, but more than this cannot be hoped for. Enquiries regarding this are being made and information being collected, and it is hoped that a definite proposal regarding this may be made hereafter.

6. In conclusion, I will add that I agree with Mr. Walch in advocating a line of rail from Bezváda to the south side of the Godávári river.

OOTACAMUND,
2nd May 1888.

(Signed) H. R. MEAD, Colonel, R.E.,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

No. 125 D.

Transferred to the Joint Secretary to Government, Public Works Department, Railway Branch, with reference to the Revenue Department's endorsement No. 2284, dated 17th April 1888.

OOTACAMUND,
5th May 1888.

(Signed) H. R. MEAD, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

NOTE.

The extension of the broad gauge line from Bezváda to the south bank of the Godávári cannot, in my opinion, be long deferred.

It would not only secure for itself a paying traffic, but would extend the trade of Cocanada.

1063 W 49.4.88

P.W. No 5087

From

The Surveyor,
Fourth Circle.

No 1663 W 49.4.88

B

Ordered that four
copies of the list
be forwarded to the
Government of India

H.R. No 1663 W 49.4.88

Forwarded

1000
31.5.88

Jan
2/6/88

No 1663 W 49.4.88

Dated 28th May 1888.

By 31.5.88

No: 201
R.W.

Enclo: 4

Return of Public Military
Buildings in the West
Coast of India for the year
ending 31st March 1888

Forwarding 6 print-
ed copies of slip of alter-
ations & additions to—

Recd
7/6/88

To the Secy. to the Govt. of India
Ind 18/6-
with 4 copies of list
initialed
O. 31.5.88

10TH MAY 1888, No. 390 R., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Railway.

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No. 246.

H. S. THOMAS, Esq., F.L.S., F.Z.S.

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