

- (1) பக்கங்களின் எண்ணிக்கை 34
 (2) புதுக்கித் திருப்பிய நாள் 22 88
 (3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம் 15/9

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

[Handwritten signature]

அரசாணை எண். மு. கோப்புத் தாள் எண்.	2749	அச்சகம் பலவகை
நாள் : 5.9.1888		198

மடிக்கவோ கண்டபடி கையாளவோ கூடாது

[Handwritten mark]

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Account.

READ—the following paper :—

From Colonel J. PENNYCUICK, R.E., Superintending Engineer, Periyár Project Works, to the Chief Engineer for Irrigation, dated Periyár, 17th July 1888, No. 317 P.R.

I have the honor to submit the following report upon the purchase of the plant for the Periyár project entrusted to me by G.O. No. 69 I., dated 30th January 1888.

2. I received instructions at the India Office to place myself in communication with the Director-General of Stores and the Consulting Engineer to the India Office (Sir A. M. Rendel), from both of whom I received all possible assistance and advice, while at the same time my own freedom of action was in no way interfered with.

3. The procedure adopted was that the specifications of work to be done and conditions to be fulfilled were, in the first instance, drawn up by myself and forwarded to the India Office through the Consulting Engineer; tenders were then called for either by public advertisement or by reference to selected firms, and the tenders when received were sent to me for consideration and for discussion with the tenderers as to any modifications which appeared desirable.

4. After such discussion the tenders were returned to the India Office with a note drawn up by myself stating which tender was recommended for acceptance and what alteration in price, if any, was proposed on account of modifications introduced in the original specification. Where necessary, I had personal interviews with the manufacturers or their representatives, and in all cases consulted freely with Sir Alexander Rendel before submitting my final note. These personal interviews were of the greatest possible value.

5. The formal contracts based on my recommendations were then entered into by the India Office, who undertook the final receipt and despatch of the stores.

6. No material alteration has been made in the general arrangement of the plant on which the original estimate was based, but numerous modifications in detail—the result of discussion with the manufacturers—have been adopted.

7. The attached statement shows the actual cost of the whole of the plant as compared with the estimated amount shown in the statement printed with G.O. No. 69 I. of 30th January 1888.

8. This statement shows a net saving of £2,387, but the whole of this is not genuine saving: £520 is due to the omission of the hand-power boring machines which, after careful trial during last season, were found not to work satisfactorily, and about £1,200 to the shortening of the length of the wire tramway. It was found on discussion with the manufacturers that the extra cost of extending the line from the foot of the ghât to the lime quarries would involve complications which would not be compensated by the saving in cost of carriage over this length of ordinary road. It was therefore determined to use the tramway only from the foot of the ghât to the head of the cutting and to bring the lime stone to the former place by ordinary carts, the cost of which will not greatly, if at all, exceed that of constructing, working and maintaining the tramway.

9. On the other hand, the total sum of £11,213 includes the cost of the piping for the high pressure turbines which it was originally proposed to make up in India, and for which Rs. 4,800, or about £340, is provided in the estimate; the whole of the iron work and gearing for the "hoist for landing goods at site of dam," the cost of which may be taken at Rs. 1,000 or £70; the wrought iron shutters included in the estimate for the main dam, for which Rs. 3,000, or say £210, is provided; and steel for drills to the value of £96, which is provided for in the estimates under the head of working expenses.

10. The net amount to be compared with the £13,600 of the estimate is, therefore, £11,213 + 1,720 — £716, or £12,217, showing a saving of £1,383, which may be looked upon as a satisfactory result.

11. There will also be a considerable saving on the provision for freight, the actual cost of freight on the items already sent out being £428 for plant, costing £3,315, or about 13 per cent. on the cost. This proportion is not likely to be materially exceeded for the remaining items, and the total cost of freight will probably not exceed £1,500, the provision in the estimate being £3,400.

12. Looking at the totals of the various groups of plant, it will be seen that there is a substantial saving on the cost of each group with the exception of the wood-working machinery and the piping. On the former there is a trifling excess, on the latter a considerable one. This is due to the fact that it has been found advisable to increase the diameter of the pipes for both water and air, and also to substitute wrought iron for cast iron. These alterations, while increasing the first cost, will also greatly increase the efficiency of the plant; but apart from the alterations, I think that I somewhat under-estimated the cost of these items. The lengths have been slightly reduced in accordance with the more accurate information obtained since the original estimates were made.

13. On the whole, I venture to say that my deputation to England for the purpose of procuring this plant has been amply justified by the result not only as regards economy in first cost, but also by the certainty that we have obtained exactly what we want and by the avoidance of mistakes and misunderstandings which might interfere with the satisfactory progress of the work. I am able to say that this view is fully concurred in by the Consulting Engineer to the India Office.

14. I enclose a statement of my expenses in connection with the duty in question, the refund of which I request may be authorised.

15. It is presumed that the ruling of the Civil Travelling Allowance Code, by which double the first-class fare is allowed for journeys by railway only, applies to journeys in India, and that for journeys out of India actual expenses only are claimable; if the former be allowed, then for items 2 to 6, aggregating Rs. 1,434-12-3, will have to be substituted—

	RS.	A.	P.
Return ticket from Bombay to Brindisi	900	0	0
Double first-class fare from Brindisi to London and <i>vice versa</i> (£49-12-0)	700	3	9
Total	1,600	3	9

being an addition of Rs. 165-7-6.

16. With regard to item 9, I beg to state that I found it absolutely necessary to have a sitting room where I could not only work myself, but receive the numerous visitors (tenderers for machinery and their representatives) who came to discuss with me matters connected with the work, and I found it impossible to obtain chambers in a suitable part of London for less than 4 guineas a week. The single bed-room in the neighbourhood of a club, which would have amply sufficed for my own requirements, could have been obtained for less than half this sum, and as the extra expenditure was incurred solely on public grounds, I think I am justified in asking Government to pay half the actual expenditure incurred by me.

17. It will be seen that the amount of the enclosed bill added to my salary for the period of my absence (about Rs. 5,900) amounts to considerably less than the sum allowed in the project estimates for the purpose.

18. In G.O. No. 3262 W. of 30th November 1887, Government were good enough to sanction my handing over charge of my office at Madras previous to departure for England, and I now request that I may be considered to have resumed charge on arrival at Madras on the morning of the 4th instant, as it was necessary that I should remain there a day or two to consult the Chief Engineer and the Examiner, Public Works Accounts, on various matters.

From the Examiner, Public Works Accounts, dated 18th August 1888, No. 2101.

No. 26 W.

Forwarded to the Secretary to Government, Public Works Department, for disposal.

The undersigned would recommend the charges—

(1) Sleeping car.

(2) Office rent, which require the sanction of Government, be passed.

2. It is suggested, as proposed by the Examiner, that the whole of Colonel Pennycuik's pay, &c., while in England be charged to Tools and Plant.

3. It is considered that Colonel Pennycuik, R.E., may be considered to have resumed charge of the Periyár works on the 4th July, the date of his return to Madras.

CHEPÂR,
22nd August 1888.

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

ORDER—dated 5th September 1888, No. 2749 W., Public Works.

The Government have perused Colonel Pennycuik's report with satisfaction.

2. The recommendations made by the Chief Engineer for Irrigation are sanctioned. As only actual expenses are admissible to Colonel Pennycuik while on duty in England, the statement of expenses will be passed as submitted by him.

(True Extract.)

Captain, R.E.,
Under-Secy. to Govt., P.W.D.

To the Superintending Engineer, Periyár Project.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.

Exd. S. J. Pereira.
Spare Copies

GENERAL.
ACCOUNT.

Gobt. of 1888 Madras
PUBLIC WORKS.

Dated September, 5th.

Recd.

Encl.

G.O., 5th Sept. 1888, No. 2749 W.

SEPTEMBER.

Periyar Project

Orders on letter from Colonel Pennycuik, R.E., submitting report of work done by him while in England in connection with the selection of machinery for the —.

30TH JANUARY 1888, No. ³/_{69 L.} PUBLIC WORKS.

PUBLIC WORKS DEPARTMENT.

LETTER—to

THE RIGHT HONORABLE THE SECRETARY OF STATE FOR INDIA.

MY LORD,

In pursuance of the permission accorded in your Lordship's despatch, No. 9 P.W., dated 20th October 1887, we beg to acquaint your Lordship that Col. Pennycuik, R.E., will leave this country for England by the first mail next month to select the machinery required for the Periyar Project. Colonel Pennycuik has been directed to place himself, on arrival in England, in communication with the India Office, and, under instructions there obtained, to arrange for the purchase and early despatch to this country of the machinery required.

2. We request that your Lordship will be pleased to issue the necessary orders to ensure his being allowed considerable latitude in this matter, subject only to the proviso that the total cost of machinery required for the project from England, as shown in the list printed with the accompanying Proceedings, Madras Government, No. 69 L., dated 30th January 1888, is not materially exceeded. Should the purchase of the machinery selected involve a large excess over the total amount provided in the estimates, we beg that your Lordship will arrange to give us an early intimation of the fact before the Director-General of Stores is allowed to conclude the purchase.

3. We further beg to add that a special indent, in the usual form, for the machinery, &c., required will be forwarded as soon as possible.

We have the honor to be,

My Lord,

Your Lordship's most obedient, humble servants,

(Signed) C. G. MASTER.

(") P. P. HUTCHINS.

Fort St. George,
30th January 1888.

Ead. E. Fernandez.

GOVT. OF MADRAS.

PUBLIC WORKS DEPARTMENT.

LETTER to the Right Honorable
the Secretary of State for
India.

No. 69³ L. dated 30th Jan. 1888.

Stating that Colonel Pennycuik, R.E., will
leave for England by the first mail next month
to select the machinery required for the Periyar
Project, and desiring that the necessary instruc-
tions may be issued to that officer on his arrival.

Comparative statement

Showing estimated and actual cost of Machinery for the Periyar Project

Description	Estimated		Actual		Remarks
	£	£	£	£	
8 Rock boring Machines	600		400		
Carrage for four drills	80		196		(a) Two carriages are provided instead of one
Air compressors	150		497		
Air Receiver	50		60		
Air Distributor	45		24		
Water injector	15		(b)		Included in cost of drill carriages
Fan to exhaust 6000 cubic feet of air per minute	60		40		
Apparatus for electrical firing	400		13		
8 sets of 20 drills			96		
Duplicate and reserve parts			138		(c) These were included in the estimated cost of the drills.
Gearing from turbine to air compressors			73		
8 Hand power Machines	520				
		1920		1537	
6 Stone breakers	900		1039		
6 Disintegrators	660		579		
Conveyors for stone & lime			77		
2 Mortar Mixers	120		100		
2 Concrete Mixers	240		180		
Mortar & stone measures	160		(d)		(d) Includes wire netting and gearing for lifting
Main shaft lifting & gearing	400		290		
Pump to throw 3000 gallons per hour	80		55		
		2560		2319	
2 Miles portable Railway	1000		490		
Carried over	1000	4480	490	3856	

Brought forward	1892	1893
12 sets points and crossings	90	64
6 Iron tables	45	42
40 waggon 20 cubic feet	200	410
6 Special lifting cranes		64
	1335	1070

6 one ton cranes	450	396
6 Half ton	360	308
2 crab winches 5 ton	25	22
4 " 3 "	40	34
2 " 2 "	16	16
6 Hold fast hydraulic lifting jack	30	23
2 " lifting and traversing	16	12
	957	811

Twine tramway to carry 100 tons per day &c.	3500	1874
do do to carry 200 tons per day	700	931
	4200	2805

Turbine to indicate 150 horse power	450	346
2 " to indicate 60 horse power	160	257
	610	603

Saw frame	190	214
General joiner	90	104
	280	318

Steamer	800	440
Four oared rowing boat	80	36
Pair oars	60	24
	940	500

600 ft of 3" piping	25	631	6450 ft of 4" iron pipe
6600 " 2 1/2 "	280	15	4100 ft of 1 1/2 " pipe
1200 " 1 "	25		
Bricks fittings and cocks	10	7	
400 ft of 12" wrought iron pipe		182	
336 " 10 "		136	

Carried over 1892 10934

Brought forward	1892	1893
Hydraulic Press	80	60
Two weighing machines	50	59
Wrought iron gate platters for Main Lane		160
Minor and miscellaneous items	348	
	478	279

Total 13600 11213

Perija - }
17 July 88

J. B. Jones - Col. R. E.
Superintending Engineer,
Perija or Project works.



enclosure in no 317 PR
17.7.88

comparative state-
ment showing esti-
mated and actual
cost of machinery for
the Periyar Project.

Periyar - }
17 July 1888 }

Statement of expenses

2749



Serial	Particulars	Amount		
		Rs	As	Pais
1	Double the first class fare from Madras to Bombay and back	242	12	0
2	Return ticket from Bombay to London via Brindisi	1250	0	0
3	Paid for landing and embarking, dock dues &c at Bombay, Brindisi & London	6	14	3
4	Luggage from Brindisi to London & return (£ 2.18.11)	41	9	5
5	Sleeping car — do — do (£ 8.19.6)	126	0	0
6	Cabs, porters — &c. (£ 0.14.7)	10	4	7
7	Travelling expenses in England for travelling (£ 0.6.0)	4	7	6
8	Postage, stationery, messengers and sundry expenses (£ 3.2.5)	44	0	11
9	Office rent for 16 weeks (February 24 to June 18) at £2-2.0 per week £ (33.12.0)	474	4	3
Total Rupees		2200	4	11
Deduct advance of Rs 1500 received at Madras on 4 July 1888		1500	0	0
Balance		700	4	11

J. B. J.
Superintending Engineer
Periyar Project Works



GOVT.
OF MADRAS.

1888.

(P. W.
DEPT.)

CHIEF ENGINEER FOR IRRIGATION

Madras, 25 July 1888.

OFFICE NOTE, N^o 153.

Sh. 3

Circulation Register.

To	From	Despatch Date.	Receipt Date.
to	D. & S.		

Keep with.

No. dated 1888.

Enclosure in No. 317 PR
17-7-88

Statement of expenses.

Please forward the accompanying letter No. 317 P.D. dated 14 July 1888 from the Superintending Engineer, Periyar project, and let us know (1) whether Col. Conyngham is entitled to double the first class fare for railway journeys made out of India or only to actual expenses, (2) whether his salary, travelling allowance and other incidental charges may be debited to the project or addition to the percentage charge for establishment or whether the sum should be charged to Tools and Ma-

9/2749

in the ground that his deputation to England was necessary for the purchase of the machinery required for the project, and (2) whether there is any objection to his being considered to have resumed charge of his duties on his arrival at Madras on the morning of the 4th instant.

180
25/7/08.
D.C.S.

B.H.
25-7-88

8134.

To S.I.

A^o 21018/18.88
2m. 3

Only actual expenses are admissible to Col. J. Pennycuik R.E. while at home on special duty; the following items require the special sanction of Government:-

- (1) Sleeping cars..... Rs. 120
- (2) Office rent for 16 weeks..... Rs. 474-4-3

2. Under para 1497 of the Madras P.W. Code, the Periyar Project has to bear its own tools and plant charges, there appears therefore no objection to the pay etc. of

Col. Pennycuik, during the period he was employed in selecting machinery in England, being charged to tools and plant, with the sanction of Government.

3. Col. Pennycuik R.E. gave over charge of his duties when going to England at Madras, and it is for Government to decide where he should be considered to have resumed charge on return. The records of this office show that Col. Pennycuik arrived at Madras on the 4th July but that he resumed charge from Mr. Taylor on the forenoon of the 12th July.

180

M. 12/8
M. 180.

No. 317.P.R

10/1/89
Office of the Supt. Engineer,
Periya Project Works,
Periyar 17 July 1888.



From

Col. J. Pennycook R.E.,
Supt. Engineer,
Periya Project Works.

To

The Chief Engineer,
for Irrigation.

Sir

Enclos 2.

I have the honor to submit the following report upon the purchase of the plant for the Periya Project, made to me by G. No. 69 I d/30 January 88.

2. I received instructions at the India office to place myself in communication with the Director General of stores and the Consulting Engineer to the India office (Sir A. H. Rendel) from both of whom I received all possible assistance and advice, while at the same time my own freedom of action was in no way interfered with.

3. The procedure adopted was that the specifications of work to be done and conditions to be fulfilled were

27.49W

in the first instance drawn up by myself and forwarded to the India office through the Consulting Engineer. Tenders were then called for either by public advertisement or by reference to selected firms, and the tenders when received were sent to me for consideration and for discussion with the tenderers as to any modifications which appeared desirable. After such discussion the tenders were returned to the India office with a note drawn up by myself stating which tender was recommended for acceptance and what alteration in price, if any, was proposed on account of modifications introduced in the original specification. Where necessary I had personal interviews with the manufacturer or their representatives, and in all cases consulted freely with Sir Alexander Rendel before submitting my final note. These personal interviews were of the greatest possible value.

5. The formal contracts based on my recommendations were then entered into by the India office who under took the final receipt and despatch of the stones.

6. No material alteration has been made in the general arrangement of the plant on which the original estimate was based, but numerous modifications in detail, the result of discussion with the manufacturers have been adopted.

7. The attached statement shows the actual cost of the whole of the plant as compared with the estimated amount shown in the statement printed with L.C. No 69 of 30 January 1888.

8. This statement shows a net saving of £2,587 but the whole of this is not genuine saving; £520 is due to the omission of the hand power boring machines which after careful trial during last season were found not to work satisfactorily, and about £1200 to the shortening of the length of the wire tramway. It was found on discussion with the manufacturers that the extra cost of extending the line from the foot of the Ghat to the lime quarries would involve complications which would not be compensated by the saving in cost of carriage over the length of ordinary road. It was therefore determined to use the tramway only from the foot of the Ghat to the head of the cutting and to bring the lime stone to the former place by ordinary

or heavy carbo, the cost of which will not greatly if at all exceed that of constructing, working and maintaining the tramway.

9. On the other hand the total sum of £ 11,113 includes the cost of the piping for the high pressure turbines which it was originally proposed to make up in India, and for which £ 6,200 or about £ 360 is provided in the estimate. The whole of the civil work and gearing for the hoist for landing goods at pit of dam the cost of which may be taken at £ 1000 or £ 70, the wrought iron shutter included in the estimate for the main dam, for which £ 3000 or say £ 210 is provided, and still for drill to the value of £ 96 which is provided for in the estimate under the head of working expenses.

10. The net amount to be compared with the £ 13,600 of the Estimate is therefore £ 11,113 + 1720 = £ 716, or £ 12,127, showing a saving of £ 1383 which may be looked upon as a satisfactory result.

11. There will also be a considerable saving on the provision for freight, the actual cost of freight on the items already

already sent out being £ 429 for plant costing £ 3315 or about 13 percent on the cost. This proportion is not likely to be materially exceeded for the remaining items, and the total cost of freight will probably not exceed £ 1500, the provision in the estimate being £ 3,400.

12. Looking at the totals of the various groups of plant it will be seen that there is a substantial saving on the cost of each group with the exception of the woodworking machinery and the piping. On the former there is a trifling excess, on the latter a considerable one. This is due to the fact that it has been found advisable to increase the diameter of the pipes for both water and air, and also to substitute wrought iron for cast iron. These alterations while increasing the first cost will also greatly increase the efficiency of the plant, but apart from the alterations, I think that I somewhat underestimated the cost of these items. The length has been slightly reduced in accordance with the more accurate information obtained since the original estimate was made.

13. On the whole I venture to say that sup. depulcation to England for the purpose of procuring this plant has been amply justified by the result, not only as regards economy in freight but also by the certainty that we have obtained exactly what we want, and by the avoidance of mistakes and mis-understandings which might interfere with the satisfactory progress of the work. I am able to say that this view is fully concurred in by the Consulting Engineer to the India Office.

14. I enclose a statement of my expenses in connection with the duty in question the refund of which I request may be authorized.

15. It is presumed that the ruling of the Civil Travelling Allowance Code by which double the first class fare is allowed for journeys by railway only applies to journeys in India and that for journeys out of India actual expenses only are claimable; if the former be allowed then for items 2 to 6, aggregating Rs 1436-12-3 will have to be substituted.

Return tickets from Bombay. Rs 900

Double 1st class fare from Bombay to London and vice versa (Rs 700-3-9)

Rs 1600-3-9

being an addition of Rs 1600-7-6.

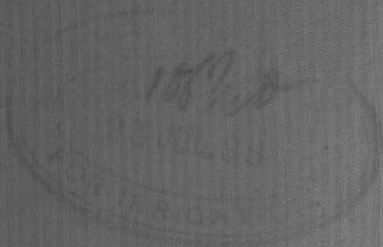
16. With regard to item 9 I beg to state that I found it absolutely necessary to have a sitting room where I could not only work myself but receive the numerous visitors (traders for machinery and their representatives) who came to discuss with me matters connected with the work, and I found it impossible to obtain chambers in a suitable part of London for less than four guineas a week. The single bed room in the neighbourhood of a club ^{which} would have amply sufficed for my own requirements could have been obtained for less than half this sum, and as the extra expenditure was incurred solely on public grounds I think I am justified in asking Government to pay half the actual expenditure incurred by me.

17. It will be seen that the amount of the enclosed bill, added to my salary for the period of my absence (about Rs 5900) amounts to considerably less than the sum allowed in the project estimates for the purpose.

18. I beg to say that the Government were good enough to sanction

Very

14



15

From,

The Sup^g Engineer
Perryar Project

To,

The Chief Engineer
for Irrigation

S. & S.

LC 317.P.R

P.W. 855

Dated 17th July 1955

encl^{re} 2.

Submits report upon
the purchase of the
plant for the Perryar
Project -

sent
a fact

From the Suply. Env. P. Provent. No 317 P.R. of 17.7.88
 " " Env. Mura " 2101 of 18.8.88
 " " Ch. S. for Provent. " 26 w of 22.8.88

The Govt. have
perused Colonel Pennyman's
report with satisfaction.

2. The recommendations
made by the Chief Surg^y
for J^r are sanctioned.
As only actual expenses
are admissible to Col.
Pennycook while on
duty in England,
the statement of ex-
penses will be passed
as submitted by
him.

Work
29:18.55

Col. of 1888

PUBLIC WORKS.

6/7

5 Sept 1888

Public Project

Letter on paper sent
from
written by C. L. Riving.
which R. L. Riving has
report of work done
by him while in
England in connection
with the selection
of machinery for
the ———

8/5/89