M.R.O. 1—77,006—8-6-37.

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MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No. 2813 Press / Mis.

84-85

Dated 4 — 9 1866.

Not to be folded or roughly handled

Proceedings of the Madras Government, Public Works Department, 4th September 1866.

No. 84. Read the following Endorsement of the Officiating Superintending Engineer, 4th Division, dated Madras, 21st August 1866, No. 1,702:—

Read the following letter from the Officer in charge No. 3 Range, Madras District, to the Officiating Superintending Engineer, 4th Division, dated Streepermattur, 9th July 1866, No. 67.

1. I have the honor to forward my second Report on the above experiment, and trust it will afford some little information at least on the subject, which only very careful observation can decide. I have done my best in the matter, under circumstances in which the work was imposed on the Department.

1 Report.
1 Particulars of water supply, B.
1 Experimental observations, A.

2. I find it necessary to bring to your notice that the Mirasidar of the land who allowed as to experiment thereon has suffered rather largely by obliging us. I have computed his loss at Rupees 27-8-0 on the first experiment, and Rupees 21-13-0 on the latter. This loss has been occasioned by our having imposed on him an expensive lift for raising the water from well; this usual method was by means of two piccotas, for which four men were hired at a monthly rate. These men served him for ploughing, sowing, &c. By having him use a bullock lift, he has had to support them with a driver at a heavy cost, and provide also leather buckets at the rate of one a month almost at no little cost. When the said Mirasidar undertook the cost of experiment, he did not calculate he would have been a loser, he has too certainly ascertained the fact now. I think he ought to be compensated for the loss, and I would recommend that on the sale of the Government bullocks, which were employed on the experiment, he be paid from the proceeds. Some little compensation is also due to my office establishment, who devoted some time and care in the recording of observations, and collecting other incidental information connected with the experiment. I therefore solicit you will be pleased to permit me to dispose of the sale proceeds of the bullocks in compensating all concerned in the matter, and beg your consideration thereof; a large outlay has been saved by the service my office has done in the matter, and considering the information collected, I think they deserve some little encouragement.

Report, second series, on the experiment to ascertain the quantity of water required for Paddy cultivation.

1. In the preliminary report on the "first series" of the above experiment, furnished on 11th June last, a description was given of the nature and condition of the land on which it was made, and the system and means of irrigation, &c. The present "second series" was observed on the same land, in connection with the "second crop" of the cultivation of the season thereon. It commenced on February 7th, immediately after the first crop had been reaped, and extended over 120 days, or up to 6th June, the crop having been reaped six days after this latter date. The ground was prepared from 7th to 11th February, the seed, "Samba paddy," the same as on the "first series," was sown on the 12th of the same month, and between this date and the 14th March, when the transplanting was made, the ground was being prepared for receiving the plants. From B., accompanying, shows exactly the every day observations, and the particulars of cultivation. There was rain on but one day during the whole period of observation, and this quantity computed (239 cubic yards) together with the water supplied (14,966 cubic yards) from well, gives the total supply to the crop at 15,205 cubic yards over 2·22 acres, which produces 6,849 cubic yards per acre. From this it appears that 57 cubic yards per acre per diem is the result of the observations.

tained the fast now. — I think he ought to be compen-
sated for the loss, and I would recommend that on the

These figures very closely tally with the "first series" result (65¾ cubic yards), the small difference being accounted for probably by a decrease in the ratio of absorption, since the ground must have been less impermeable, after going through the first crop irrigation. A very different result was expected, as the temperature was, as will be known, extremely oppressive, during the period these last observations were made. The yield of this second crop was 168 mercals of paddy, which with the straw realised, may be valued at present market rates at Rupees 105-14-0. The observations made on this second series are embodied in Forms A. and B. accompanying.

2. It has been shown above that the results of the experiment give 65 cubic yards in the "first series," and 57 cubic yards in the "second series," as the quantity of water required per diem for one acre of land. These figures are obtained from taking a general average, but the observations need be considered from another point of view.

3. From the Forms B. attached to reports of both the series, it will be observed that seventy days were occupied in the one case, and only thirty-five in the other for preparing land, &c., before actual *continuous* irrigation commenced. Dividing, therefore, each series into two periods, one for "preparation" and the other for "actual irrigation," we obtain the following figures:—

1st Series.		*2nd Series.*	
70 day's preparation ...	53 Cubic yards.	35 days' preparation ...	38 Cubic yards.
93 do. actual irrigation...	75 do.	85 do. actual irrigation ...	65 do.

as being the quantity *per acre, per diem* needed for a crop. The great difference, both in time and supply, between the periods of "preparation," as seen in each case, may be explained thus, that it required more water and more time to puddle the land at the start. The average for the actual continuous irrigation afterwards, in both cases, is pretty close.

4. The following Statement exhibits at a view the comparative results of the experiments, as twice taken:—

Particulars of observations.		First Series	Second Series.
Quantity of land	Acres	222	222
Period of observation	Days	193	126
Actual period of supply	Days	163	120
Actual supply from well	Cubic yards	12,925	14,966
Supply from rain	Do.	10,889	239
Total supply	Do.	23,814	15,205
Period occupied in preparing	Days	70	35
Period occupied in actual irrigation	Do.	93	85
Supply for preparation	Cubic yards	8,244	3,033
Supply for actual irrigation	Do.	15,570	12,172
Quantity of seed sown...	Mercals	12	12
Paddy produced	Do.	240	168
Actual cost of each crop	Rupees	170	143
Actual produce	Do.	122	105
Assessment	Do.	21	11

From the above particulars the following are deduced:—

Water required for one Acre per diem.

For preparation	Cubic yards	43
Actual irrigation	Do.	70
Seed required	Mercals	5·4
Probable produce	Do.	92

From the above Statement it appears that the cost of producing a crop of paddy far exceeds the out-turn thereof. This peculiarity appertains to the experiment only, for an expensive method of irrigation was adopted. In the case of the land experimented upon, the usual method was to raise the water by two picottahs, for which four men were employed, these men not only worked at the lifts, but did the ploughing, sowing, &c. Such was not the case in connection with the

experiment; bullocks were used, which required a man to attend them. The support of these formed a large item, besides which contingent expenses for leather buckets, &c., &c., swelled the charges. From the data collected regarding cost, in the usual method, 20 Rupees an acre seems the average for one crop, exclusive of assessment.

4. The above observations apply to lands of one particular class, and therefore cannot be applied as the rule in all cases, as paddy land is very varied in description, each of which would need its own particular rate of supply.

6. To obtain definite information, requires that the subject "what quantity of water an acre "of paddy land requires for cultivation" be treated in all its details under close and undivided supervision, and to realise this, with any certainty, a special establishment should be employed to investigate the matter. It is, moreover, one, on which theory will absurdly fail, put it in any way one will: and as there is only one way of doing a thing properly, the subject should be so treated. As far as was practicable every attention has been paid in obtaining information on the subject under reference, in the experiments carried out in this range, and it is to be hoped that the reports furnished thereon will throw some light on the subject at least.

(Signed) S. OTTMANN,
Acting Sub-Engineer, No. 3 Range, Madras District.

STREEPERMATTUR,
9th July 1866.

Enclosures 3.

1. Submitted to Government in continuation of endorsement No. 1,021, dated 12th July 1866.

2. The second series of experiments were commenced on the 6th February 1866 and concluded on the 12th June 1866, and show 2¼ cubic yards of water to be required per acre per hour.

3. Under the circumstances represented by Mr. Ottmann in paragraph 2 of his letter, his proposal to compensate the Meerasidar of the land experimented upon is recommended for the favorable consideration and sanction of Government. The sale proceeds of the bullocks purchased to conduct the experiment to be resorted to to meet the outlay.

4. The money account in connection with the experiment stands as follows:—

	RS.	A.	P.	RS.	A.	P.
Amount granted in G. O. No. 1,686, dated 17th June 1865				300	0	0
	RS.	A.	P.			
Cost of first experiment	311	4	0			
Do. second do.	65	0	0			
Compensation to Meerasidars recommended in this letter...	49	5	0			
	425	9	0			
Deduct amount recovered by sale of bullocks...	63	11	7			
Balance ...	361	13	5			
Deduct amount of grant	300	0	0	300	0	0
Balance in excess of allotment	61	13	5			

5. Orders are requested as to whether the experiment is to be continued in the current official year.

(Signed) J. GODDARD, Captain, R. E.,
Offg. Superintending Engineer, 4th Division.

Proceedings of the Madras Government, Public Works Department, 4th September 1866.

No. 85. ORDER THEREON, 4th September 1866, No. 2,813.

CIVIL WORKS, No. 17.

1. The foregoing papers will be communicated to the Revenue Department in continuation of the Orders of Government No. 2,333, dated the 24th July 1866.

2. The Superintending Engineer of the 4th Division will furnish in detail the particulars of the expenditure reported in paragraph 4 of Captain Goddard's endorsement.

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R. E.,
Secretary to Government.

To the Superintending Engineer, 4th Division.
,, Revenue Department, with two Enclosures.

Exd. S. T. Augustin.

Returned to the Registrar
Govt. Office P.W.D. being Original
Enclosures.
Copies have been taken
for the use of this office
Regr's Office
16 Oct 66.

No 3 Ryots Office
Madapetnattiem

No 67

9th July 1866

From J. Ottmann Esqr
Acting Sub Coll. D.P.W.
No 3 Ryots Madras Distt

To
Captain J. Goddard R.E.
Offg Chief Engr & Secy

Sir

I have the honor to forward my second Report on the above experiments, and trust it will afford some little information at least, on the subject, which only very careful observation can decide.- I have done my best in the matter, under Circumstances in which the works was imposed on the Department.-

Enc: 3
1 Report
1 Particulars of water supply B.
1 Experimental observations A.

2 I find it necessary to bring to your notice that the Naiker of the land who allowed us to experiment thereon has suffered rather largely by obliging us.- I have Computed his loss at Rupees 2-7-8- on the first experiment and Rs 21-13- on the latter. This loss has been occasioned by our having imposed on him, an expensive lift for raising the water from well; this usual method was by means of two picottas for which 4 men were hired at a monthly rate. These men served him for ploughing, sowing-, &c. By having him use a bullock lift, he has had to support them with a dinner at a heavy cost, and provide also leather buckets at the rate of one a month almost, at no little cost.- When the said Naikar undertook the Cost of experiment, he did not calculate he would have been a loser: he has too certainly ascertained the fact now.- I think he ought to be compensated for the loss, and I would recommend that on the

sale of the Government bullocks, which were employed in the Experiment; he be paid from the proceeds.- Some little compensation is also due to my Office Establishment who devoted some time & Care, in the recording of observations, and Collecting other incidental information connected with the Experiment.- I therefore solicit you will be pleased to permit me to dispose of the said proceeds of the bullocks, in compensating all concerned in the matter, & beg your consideration thereof; a Copy of which day has been dated by the Service my Office has done in the matter, and Considering the information Obtained, I think they deserve some little encouragements.-

I have the honor to be

Your Excellencies

Most Obedient

W Keenan

Lt Colonel Corps

Ast Mr Genl Madras

Lr Bx: Offr Ast Mr Genl
Accts No 1541-

P W 3447/66.

From
The Secretary to Govt
Fort St George

Dated 12th Sept 1866

Received 15th Sept 1866

Enclosures 3 to Dr

Submits the 2d report on the experiment of ascertaining the quantity of water required for an acre of Paddy Cultivation and states that the Inamdar has suffered loss by this experiment which he has compensated, as also the Office Establishment who have devoted a portion of their time in this observation and suggests that these charges may be paid from the proceeds of the sale of Bullocks.

Report. Second Series. on the experiment to ascertain the quantity of water required for Paddy Cultivation -

In the preliminary report, on the "first series" of this above experiment, furnished on 11th June last, a description was given of the nature and condition of the land on which it was made, and the system & means of irrigation &c. The present "second series" was observed on the same land, in connection with the "second crop" of the cultivation of the season thereon. It commenced on February 7th, immediately after the first crop had been reaped, and extended over 120 days, or upto 6th June, the crop having been reaped, six days after this latter date. The ground was prepared from 7th to 11th February, the seed, "Samba paddy", the same as on the 1st Series, was sown on the 12th of the same month, and between this date and the 14th March, when the transplanting was made, the ground was being prepared for receiving the plants. Form B accompanying, shows exactly, the every day observations, and the particulars of Cultivation. There was rain on but one day during the whole period of observation, and this quantity computed (239 Cyds) together with the water supplied (4966 Cyds) from well, gives the total supply to the Crop, at 15205 Cyds over 2.22 acres, which produces 6849 Cubic yards per acre. From this it appears that 57 Cubic yards per acre per diem, is, the result of the observations. These figures very closely tally with the "first series" result (65 3/4 Cyards) the smaller

difference being accounted for probably by a decrease in the ratio of absorption, since the ground must have been less impermeable, after going through the first crop irrigation.-

A very different result was expected, as the temperature was, as will be known, extremely appreciative, during the period these last observations were made.- The yield of this 2nd Crop was 168 Measels of paddy, which with the straw realized, may be valued at present market rates at Rupees 105-14-0.- The observations made on this second series are embodied in forms **A & B** accompanying.-

2. It has been shown above that the results of the experiments, give 65 Cubic yards, in the "first series" and 57 Cubic yards, in the "2nd Series" as the quantity of water required per diem for 1 acre of land. These figures are obtained from taking a general average, but the observations need be considered from another point of view.-

3. From the forms **B** attached to reports of both the series it will be observed, that 70 days were occupied in the one case, and only 35 in the other for preparing Land &c., before actual, continuous, irrigation commenced.- Dividing therefore each series into two periods, one for "preparation" and the other for "actual irrigation", we obtain the following figures.-

1st Series		2nd Series	
70 days. Preparation —	53 Cyfts.	35 days. Preparation —	38 Cyfts.
93 days actual Irrigation —	75 Cyfts.	85 days. actual Irrigation —	65 Cyfts.

The great difference, both in time and supply, between the periods of "preparation" as seen in each case, may be explained thus, that it required more water, and more time to puddle the land at the start.- The average for the actual, continuous irrigation afterwards, in both cases, is pretty close.-

4 The following statement exhibits at a view the comparative results of the experiments, as twice taken.

Particulars of observations		1st Series	2nd Series
Quantity of land	acres	2.22	2.22
Period of observation	days	193	126
actual period of Supply	days	163	120
actual supply from well	Cyfts.	12925	14966
Supply from rain	Do.	1089	239
Total supply	Cyfts.	23814	15205
Period occupied in preparing	days	70	35
Period occupied in actual Irrigation	Do.	93	85
Supply for preparation	Cyfts.	8244	3033
Supply for actual irrigation	Do.	15570	12172
Quantity of seed sown	Measels	12	12
Paddy produced	Do.	240	168
actual Cost of each crop	Rupees	170	143
actual produce	Do.	122	105
Assessment	Do.	21	11

From the above particulars the following are deduced

water required for 1 Acre per diem

For preparation	Cyfts.	45
actual irrigation	Do.	70
Seed required	Measels	5·4
Probable produce	Do.	92

From the above statement it appears, that the cost of producing a crop of paddy, far exceeds the outturn thereof. This peculiarity appertains to the experiment only, for an expensive method of irrigation was adopted.. In the case of the land experimented upon, the usual method, was to raise the water by two picottahs, for which 4 men were employed, these men not only worked at the lifts, but did the ploughing, sowing &c^a. such was not the case, in connection with the experiments;- bullocks were used which required a man to attend them.- The support of these formed a large item, besides which contingent expences, for leather buckets &c^a &c^a, swelled the charges.- From the data collected regarding cost, in the usual method, 20 Rupees an acre seems the average for one crop, exclusive of assessment.-

5 The above observations apply to lands of one particular class, and therefore cannot be applied as the rule in all cases, as paddy land, is very varied in description, each of which would need its own particular rate of supply.-

6 To obtain definite information, requires that the Subject "what quantity of water an acre of paddy land requires for Cultivation" be treated in all its details under close, and undivided supervision, and to realize this, with any certainty, a Special establishment should be employed to investigate the matter.. It is moreover one, on which theory will absurdly fail, but it in any way one will: and as there is only one way of doing a thing properly, the subject should be so treated.. As far as was practicable, every attention has been paid, in obtaining information on the subject under reference, in the experiments carried out in this Range, and it is to be hoped, that the Reports furnished thereon, will throw some light, on the subject at least..

No 3 Range Office
Three permutations
9th July 1866

L Newman
Ag Sub Conr & Dr
No 3 Range Madras Divn

From
The Asst Pub Engr
No 3 Range Madras

To
The Offg Supdg Engr
Pub Buildings
Pub Roads &
Rev
Fort St George

Cuddalore Collectorate Office 19th July 1866

Report Second
Series on the experi-
ments on Paddy
the quantity of water-
required for Paddy
Cultivation.

Sir

No 1702.

Second Report on the experiment for ascertaining the quantity of water required for maturing Paddy.

Letter from the Executive Agent No 3 Range Madras
No 67 dated 9th July 1866.

Enclosures

1 Submitted to Government in continuation of endorsement No 1021 dated 12th July 1866.

2 The second series of experiments were commenced on the 6th February 1866 and concluded on the 12th June 1866, and shew 2½ Cubic Ft of water to be required per acre per hour.

3 Under the circumstances represented by Mr Ottaway in para: 2 of his letter, the proposal to compensate the Meerasidar of the land experimented upon is recommended for the favorable consideration and sanction of Government. The sale proceeds of the bullocks purchased to conduct the experiments to be resorted to meet the outlay.

4 The money account in connection with the experiment stands as follows.

Amount

Amount granted in G. O. No. 1686 dated 17 June/65 Rs 300

Cost of first experiment	Rs 311. 4. —	
Do second Do	Rs 65. — —	
Compensation to Meeraseedars recommended in this letter	49. 5. —	
	425. 9. —	
Deduct Amount recovered by sale of bullocks	63. 11. 7.	
Balance	Rs 361. 13. 5.	
Deduct Amount of grant	300. — —	300.
Balance in excess of allotment	Rupees 61. 13. 5.	

Orders are requested as to whether the experiment is to be continued in the current Official year.

Supdg Engrs Office
4th Division
Madras
21st August 1866

Do Jervois Capt. R.E.
Offg Supdg Engr 4th Dn

To
Colonel C. A. Orr R.E.
Secretary to Government P.W.D.

288

A

Experimental Observations to determine the quantity of water per Acre per hour required for paddy cultivation

1 District	2 Village	3 Village	4 Latitude	5 Month & Date	6 Duration of Observation	7 Quantity of water used	8 Source of Supply	9 Nature of irrigated soil	10 Soil	11 Nature average Date of planting &c &c	12 Room temperature	13 Rain evaporation	14 Rain fall	15 General character of weather.
Madras	Nyd Aspect to Kummumbilly was Rangada	Village	Latitude 13°-2-30" North	Longitude 80°-8-9" East	From 7th Feby to 6th June/66	120 Days	14966½ Cubic Yards	Clay	2.22 Acres	Clay Loam Rich	Room temperature	Rain evaporation	Rain fall	During this second series of observation, the weather has been extremely oppressive, attended with very high winds and dust storms. Without a trifling exception, no rain may be said to have fallen. The Thermometer in the shade has invariably stood at 105°, and the hot westerly winds very disagreeable, parching up everything.
										1,0 Feet	93¾ Degrees in shade.			
										From 7th Feby to 6th June/66	Observations were not made			
											were taken the means			
											were taken the means			
											Inches Cubic Yards (239			
											1 — 80			

No 3 Range Office
Transmitted
9th July 1866

W Beeman
Asst Sub Engr D.P.W.
In Chge No 3 Range Trichinopoly Dist.

P W 1866 Despatched
Copy of Govt for September
From No 3443.
The Offg Supt & Engineer
4th Division

To The Secretary
to Government
dated 21st August 1866
Rec'd 22nd August 1866
Ex. 4. No 1702.

Submitting a second Report on the experiment of ascertaining the quantity of water required for maturing Paddy.

No 84

No 2813 - 4th Septr 1866.

Rec: 29 Sept/66
2 1639/66

From

The Asst Sub Engr
No 3 Range Guadras Divn

To

The Offg Supt Engr
4th Circle

Dated 9th
Rec 3 July/66

~~P.W. 2644/66~~

A

Experimental observation
to determine the quantity
of water per acre per hour
required for Paddy Cul-
-tivation.

P.W. Rec 4 Sept 2/66 Lr No 84

Enclosure D Letter No 67

Dated 9th July 1866

B.

District of Madras
Taluq of Sydapett.
Village of Kummumbelli.

Particulars of Water supply to 2.22 Acres of land in the

"2nd Class."

Month & Date	Water Supply	Rain Fall	Mean temperature	Mean evaporation	Direction of Wind	Clear or Cloudy	Soil	Remarks
1866	Cubic Feet	Inches Cents	Degrees					
February 7	450	.—.	91	"	South East	Clear	Rich Clay loam	Puddling a piece of ground for ploughing for Nursery.
8	900	.—.	91	"	Do	Do		
9	900	.—.	91	"	Do	Do		
10	900	.—.	91	"	Do	Do		
11	900	.—.	91	"	Do	Do		
12	900	.—.	91	"	Do	Do		Seed sown in Nursery.
13	"	.—.	91	"	Do	Do		
14	"	.—.	91	"	Do	Do		
15	900	.—.	91	"	Do	Do		Watered Nursery
16	450	.—.	91	"	Do	Do		Puddling ground for ploughing
17	450	.—.	91	"	Do	Do		
	900	.—.	"	"	"	"		Watered Nursery
18	900	.—.	91	"	Do	Do		Watered ploughed ground
19	450	.—.	91	"	Do	Do		Do Do
20	450	.—.	91	"	Do	Do		Puddling ground for ploughing
21	1800	.—.	91	"	"	"		Watered Nursery
	900	.—.	"	"	Do	Do		Puddling ground for ploughing
22	2700	.—.	91	"	Do	Do	Rich Clay loam	
23	2700	.—.	91	"	Do	Do		Watered ploughed ground
24	2700	.—.	92	"	Do	Do		
25	2700	.—.	92	"	Do	Do		Puddling ground for ploughing
26	2700	.—.	92	"	Do	Do		Watered ploughed ground
27	2700	.—.	92	"	"	"		Watered Nursery
	900	.—.	"	"	Do	Do		Watered ploughed ground
28	2700	.—.	92	"	South	Do		Puddling ground for ploughing
March 1	2700	.—.	92	"	Do	Do		Watered ploughed ground
2	3600	.—.	92	"	Do	Do		
3	3600	.—.	93	"	Do	Do		Puddling ground for ploughing
4	3600	.—.	93	"	Do	Do		Watered Nursery
	900	.—.	"	"	Do	Do		
5	3600	.—.	93	"	Do	Do		Watered ploughed ground
6	3600	.—.	93	"	Do	Do		
	53550	.—.	2563		Carried Over			

1866		53550	.——.	2563	"	Brought forward			
March	7	3600	.——.	93	"	South	Clear		Watered ploughed ground.
						Do	Do		Puddling ground for ploughing.
	8	5400	.——.	93	"	Do	Do		Watered ploughed ground
	9	4500	.——.	93	"				Watered Nursery
		900	.——.	"	"	Do	Do		
	10	4500	.——.	93	"	Do	Do	Rich Clay Loam	Watered ploughed ground
	11	4500	.——.	93	"	Do	Do		
	12	3600	.——.	93	"				Watered Nursery
		900	.——.	"	"	Do	Do		
	13	450	.——.	93	"				Transplanted three days.
		2700	.——.	"	"	Do	Do		
	14	2700	.——.	93	"	Do	Do		
	15	1800	.——.	93	"	Do	Do		
	16	3600	.——.	93	"	Do	Do		
	17	3600	.——.	94	"	Do	Do		
	18	3600	.——.	94	"	Do	Do		
	19	3600	.——.	94	"	Do	Do		
	20	3600	.——.	94	"	Do	Do		
	21	3600	.——.	94	"	Do	Do		
	22	3600	.——.	94	"	Do	Do		
	23	3600	.——.	94	"	Do	Do		
	24	4500	.——.	94	"	Do	Do		
	25	4500	.——.	94	"	Do	Do		
	26	3600	.——.	94	"	Do	Do		
	27	2700	.——.	94	"	Do	Do		
	28	900	.——.	94	"	Do	Do		
	29	1800	.——.	94	"	Do	Do		
	30	3600	.——.	94	"	Do	Do		
	31	3600	.——.	94	"	Do	Do		
April	1	3600	.——.	90	"	Do	Do	Rich Clay Loam	Irrigated throughout.
	2	3600	.——.	90	"	Do	Do		
	3	3600	.——.	88	"	Do	Do		
	4	3600	.——.	89	"	Do	Do		
	5	3600	.——.	89	"	Do	Do		
	6	3600	.——.	89	"	Do	Do		
	7	3600	.——.	93	"	Do	Do		
	8	4500	.——.	93	"	Do	Do		
	9	5400	.——.	94	"	Do	Do		
	10	4500	.——.	94	"	Do	Do		
		182700	.——.	5812	"	Carried Over			

1866		182700	.——.	5812	.	Brought forward			
April	11	3600	.——.	91	.	South	Clear		
	12	3600	.——.	93	.	do	do		
	13	3600	.——.	93	.	do	do		
	14	3600	.——.	94	.	do	do		
	15	3600	.——.	90	.	do	do		
	16	3600	.——.	93	.	do	do		
	17	3600	.——.	91	.	do	do		
	18	4500	.——.	93	.	do	do		
	19	4500	.——.	92	.	do	do		
	20	3600	.——.	94	.	do	do	Rich Clay Loam	Irrigated throughout
	21	3600	.——.	93	.	do	do		
	22	3600	.——.	94	.	do	do		
	23	3600	.——.	92	.	do	do and Cloudy		
	24	3600	.——.	92	.	do	do		
	25	2700	.——.	92	.	do	do		
	26	3600	.——.	92	.	do	do		
	27	3600	.——.	93	.	do	Clear		
	28	4500	.——.	93	.	do	do		
	29	3600	.——.	93	.	do	do		
	30	2700	.——.	97	.	do	do		
May	1	3600	.——.	91	.	do	do		
	2	3600	.——.	92	.	do	do		
	3	3600	.—80	87	.	do	Cloudy & Rain		
	4	3600	.——.	91	.	do	Clear		
	5	3600	.——.	95	.	do	do		
	6	4500	.——.	95	.	do	do		
	7	4500	.——.	97	.	do	do		
	8	3600	.——.	96	.	do	do		
	9	3600	.——.	99	.	do	do		
	10	4500	.——.	99	.	do	do	Rich Clay Loam	do do
	11	4500	.——.	97	.	South West	Cloudy		
	12	4500	.——.	98	.	do	Clear		
	13	4500	.——.	98	.	do	do		
	14	4500	.——.	97	.	do	do		
	15	4500	.——.	97	.	do	do		
	16	4500	.——.	99	.	do	do		
	17	4500	.——.	99	.	do	do		
	18	4500	.——.	98	.	do	do		
	19	5400	.——.	99	.	do	do		
	20	5400	.——.	99	.	do	do		
		341100	.—80	9590	.	Carried Over			

1866		341100	.—80	9590	"	Drought & Ground		
May	21	4500	.——.	95	"	South West	Cloudy	
	22	4500	.——.	96	"	Do	Clear	
	23	4500	.——.	95	"	Do	Do	
	24	5400	.——.	96	"	Do	Do	
	25	4500	.——.	96	"	Do	Do	
	26	5400	.——.	95	"	Do	Do	
	27	4500	.——.	95	"	Do	Do	
	28	4500	.——.	102	"	Do	Do	
	29	4500	.——.	100	"	Do	Do	Irrigated throughout.
	30	4500	.——.	99	"	Do	Do	
	31	4500	.——.	99	"	Do	Do	
June	1	1800	.——.	98	"	West	Do & Cloudy	
	2	1800	.——.	99	"	Do	Do	
	3	2700	.——.	98	"	Do	Clear	
	4	1800	.——.	99	"	Do	Do	
	5	1800	.——.	99	"	Do	Do	
	6	1800	.——.	100	"	Do	Do	
		404100	.—80	11251				
	7	"				"	"	
	8	"				"	"	
	9	"				"	"	
	10	"				"	"	
	12	"				"	"	
Total		404100	.—80	11251	"			

Rich Clay Loam

Irrigation ceased on the 7th June/66 as crops all ripened & reaped. It was resumed on the 12th June.

No 3 Range Office
Trichinopoly
7th July 1866

A. Abercrombie
Asst Sub Engineer D. P. W.
In Charge No 3 Range Madras Dist

P. W. Dept.

No. 2813

Proceedings of the Madras Government
Under date the 4th Sept. 1866
Read the following

From
The Sec.y: Supg: Engr. of
the 4th Divn. — (H.S. No. 1702 dated 21st Aug 1866)

The foregoing papers will be communicated to the Revenue Dept. in continuation of the order of Government No. 2333 dated the 24th July 1866.

The Supt Engineer of the 4th Division will furnish in detail the particulars of the expenditure reported in para 4 of Captain Goddards endorsement

To the Supt Engr 4 Divn
— Revenue Dept. with two enclosures

Dept. 5th Sept. 1866

Rec.d 29th Aug. 1866.
3 1139 Rs

From
The Secretary
to Govt Revenue Dept.

To
The Secy. Supt Engr
4th Divn

No 1702 of 1866

Dated 9th Aug.

Received 9th Aug.

B

Particulars of work-
ently to 2.42 Rec.d of
Nos Canals in the Village of
Cummukillee near
Mangapoi, attached to
Dy Collett Tallug in
the Madras District

P.W. Rec.d 11th & 8th

Enclosures to Letter Rec.d by
dated 9th July 1866

1866 | 21 Aug

P.W. 1866. Deputt

Progs of Govt for Sept/66
No 2813

Progs of the Madras Govt

Date 7th Sept/66

Second Report
on the experiments made
near Poonamallee in the
Madras District to ascer-
tain the quantity of Water
required for Paddy cultiv-
ation, communicated to
the Revenue Department,
and the Superintending
Engineer requested to fur-
nish the particulars of
the expenditure in connec-
tion therewith.

No 84-85