

(1) Number of pages _____

(2) Date of repair _____

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.

Government of Madras.

Public works **DEPARTMENT.**

G.O. No.	1458	Press
201-202		Mis.
Dated	13. 6.	1872 .

Not to be folded or roughly handled

13

*Proceedings of the Madras Government, Public Works Department,
13th June 1872.*

Read the following papers:—

No. 201. From the Acting Superintending Engineer, 1st Division, to the Acting Chief Engineer for Irrigation, dated Dowlaisweram, 19th April 1872, No. 266.

I HAVE the honour to forward copy of a letter from the Executive Engineer in charge of Western Delta Range, Godavery District, and its accompaniments, regarding the quantity of water used in irrigating 21 Acres of land, the average, if discharged per hour throughout the season, from May to November, would be 2.7 cubic yards; a much larger quantity than we have found the land to require from several years' experience.

2. As Mr. Walch states the experiment is not satisfactory, and I would be inclined to support his proposal for employing a Government servant to carefully conduct the cultivation of some land for this purpose, only we are too busy and have too few hands to be able to spare any one at present, and the quantity of water we arrange to supply in the delta (2 cubic yards per hour per Acre) is found to be sufficient for all purposes, including navigation.

From G. T. WALCH, Esq., Executive Engineer in charge of No. 3 or Western Delta Range, Godavery District, to the Superintending Engineer, Dowlaisweram, 1st Division, dated Narsapore, 4th April 1872, No. 6.

I HAVE the honour to forward herewith a statement of the results of the experiment to ascertain the quantity of water used in paddy-cultivation.

2. The land, as shown on accompanying plan, measures 21 Acres, is classed as "Regar clay," class 8, and is assessed at Rupees 2-4-0 an Acre. It lies between the Venkiah Canal and the Parimalla Lock Calingulah channel, and could not receive water from any artificial source other than that specially provided for the experiment.

3. The cultivator was allowed to take water as he wished, but was looked after by a Lock Superintendent, who lives near the spot, and a Delta Superintendent, who frequently visited it, and they were supposed to see that he did not wilfully waste the water. The water could not be passed on to other cultivation. The water was passed from the canal through a small wooden sluice into a basin, and thence, without any velocity of approach worth considering, over a weir with a cut-stone (not very smooth) crest 2' long and 1'-6" broad. This breadth I consider too great to permit any certainty in the calculated discharges with such small depths as went over (from 1" to 4" to surface of still water); and if the observations are to be continued this year, I would propose to substitute a plate (say $\frac{3}{4}$ inch iron) with a notch in it 6" long, through which water may flow up to 6" deep.

4. The crop looked well, and the cultivator states (and his statement is believed to be true by the Delta Superintendent), that the outturn was 22½ putties of paddy. An average outturn here is considered to be 1 putty (1,600 lbs.) per Acre. Naturally every cultivator wishes to make the quantity of water required for his wet cultivation appear as great as possible, and there can be little doubt; I think in this case that the quantity of water used has been far in excess of that absolutely required. I do not see much use in indefinite experiments of this kind, and it appears to me that the best way to secure definite and trustworthy results is to rent the piece of land for a term of years, and have it cultivated by a paid servant of the Government, being prepared, if the minimum of water necessary be required, for short crops for a year or two.

Proceedings of the Madras Government, Public Works Department,
13th June 1872.

GODAVERY DISTRICT (WESTERN DELTA.)

Record of Water supplied for Cultivation of Paddy acreage, 21 Acres.

Month and Date.	Depth of Water flowing over Dam.	For how many Hours.	Total Cubic Feet.	Rainfall.		Remarks.
				In.	Cents.	
1st May 1872.						Length of crest 2' Discharge in C. ft. per sec. = $\sqrt{2g} \times .66 \times .48 \times 2$ H. $\sqrt{H}$.
2nd "	.....	.....	.....	.....	.....	
3rd "	.....	.....	.....	.....	.....	
4th "	.....	.....	.....	.....	.....	
5th "	.....	.....	.....	.....	.....	
6th "	0 2"	6	7,494	.....	.....	
7th "	.....	.....	.....	.....	.....	
8th "	.....	.....	.....	.....	.....	
9th "	.....	.....	.....	0 05	.....	
10th "	0 2½	2	3,512	1 40		Quantity of seed put in seed-bed 120 Kunchums, (one Kunchum = 320 Rupees weight); outturn 23 Putties, one Putty = 200 Kunchums.
11th "	.....	.....	.....	.....	.....	
12th "	0 3	2	4,626	.....	.....	
13th "	0 2½	2	3,512	0 12	.....	
14th "	.....	.....	.....	.....	.....	
15th "	0 2½	3	5,268	.....	.....	
16th "	0 2½	3	5,268	0 60	.....	
17th "	0 2½	3	5,268	0 12	.....	
18th "	.....	.....	.....	.....	.....	
19th "	0 2	24	29,976			Seed-beds sown.
20th "	0 2	12	14,988	.....	.....	
21st "	.....	.....	.....	.....	.....	
22nd "	.....	.....	.....	.....	.....	
23rd "	.....	.....	.....	0 5	.....	
24th "	.....	.....	.....	.....	.....	
25th "	.....	.....	.....	.....	.....	
26th "	.....	.....	.....	.....	.....	
27th "	.....	.....	.....	0 15	.....	
28th "	.....	.....	.....	.....	.....	
29th "						Total May...
30th "	.....	.....	.....	.....	.....	
31st "	0 2	24	29,976	.....	.....	
1st June 1872.	.....	.....	109,888	2 49	.....	
2nd "	.....	.....	.....	.....	.....	
3rd "	0 2"	15	18,735	0 02½	.....	
4th "	.....	.....	.....	.....	.....	
5th "	0 1½	24	19,464	0 10	.....	
6th "	0 2"	24	29,976	0 2½	.....	
7th "	0 2"	24	29,976	.....	.....	
8th "	0 2"	24	29,976	.....	.....	
9th "	0 1½	12	9,732	.....	.....	
10th "						Total June...
11th "	.....	.....	.....	0 12	.....	
12th "	.....	.....	.....	.....	.....	
13th "	.....	.....	.....	.....	.....	
14th "	.....	.....	.....	.....	.....	
15th "	0 1½	24	19,464	.....	.....	
16th "	0 2"	24	29,976	.....	.....	
17th "	0 2"	24	29,976	.....	.....	
18th "	0 2"	24	29,976	.....	.....	
19th "	0 2"	24	29,976	.....	.....	

Proceedings of the Madras Government, Public Works Department,
13th June 1872.

Record of Water supplied for Cultivation of Paddy, &c.—(Continued.)

Month and Date.	Depth of Water flowing over Dam.	For how many Hours.	Total Cubic Feet.	Rainfall.		Remarks.
				In.	Cents.	
19th June 1872.	0 1½	24	19,464			Total June...
20th "	.....	.....	.....	0 17	.....	
21st "	.....	.....	.....	0 95	.....	
22nd "	.....	.....	.....	0 50	.....	
23rd "	0 2"	24	29,976	0 10	.....	
24th "	0 2"	12	14,988	.....	.....	
25th "	0 2"	24	29,976	.....	.....	
26th "	0 2"	12	14,988	0 10	.....	
27th "	0 1	24	10,728	.....	.....	
28th "	0 1"	24	10,728	.....	.....	
29th "	0 2"	24	29,976			Total July...
30th "	0 2½	24	42,144	.....	.....	
1st July 1872.	0 2"	24	29,976	.....	.....	
2nd "	0 3"	24	55,512	0 25	.....	
3rd "	.....	.....	.....	1 30	.....	
4th "	0 2"	24	29,976	0 35	.....	
5th "	0 2"	24	29,976	.....	.....	
6th "	0 2"	24	29,976	.....	.....	
7th "	0 2"	24	29,976	0 10	.....	
8th "	0 2"	24	29,976	0 02½	.....	
9th "	0 2"	24	29,976	.....	.....	
10th "	0 3"	24	55,512	0 2½		Total Aug...
11th "	0 3"	24	55,512	.....	.....	
12th "	0 3"	24	55,512	.....	.....	
13th "	0 3"	24	55,512	1 10	.....	
14th "	0 3"	24	55,512	0 60	.....	
15th "	.....	.....	.....	0 12½	.....	
16th "	.....	.....	.....	0 12½	.....	
17th "	0 3"	24	55,512	1 25	.....	
18th "	0 3"	12	27,756	0 92½	.....	
19th "	.....	.....	.....	0 25	.....	
20th "	0 3"	24	55,512	0 27½		Total Sept...
21st "	0 3"	24	55,512	0 7½	.....	
22nd "	0 3"	24	55,512	0 20	.....	
23rd "	0 3"	24	55,512	0 2½	.....	
24th "	0 3"	24	55,512	0 27	.....	
25th "	0 3"	24	55,512	0 80	.....	
26th "	0 3"	24	55,512	0 20	.....	
27th "	.....	.....	.....	.....	.....	
28th "	.....	.....	.....	.....	.....	
29th "	0 3"	24	55,512	.....	.....	
30th "	0 3"	24	55,512			Total Oct...
31st "	.....	.....	.....	.....	.....	
1st Aug. 1872.	0 2"	24	29,976	0 2½	.....	
2nd "	0 3"	24	55,512	.....	.....	
3rd "	0 2½	24	42,144	.....	.....	
4th "	0 2½	24	42,114	.....	.....	
5th "	0 2	24	29,976	.....	.....	
6th "	0 1	24	10,728	0 52½	.....	

*Proceedings of the Madras Government, Public Works Department,
13th June 1872.*

Record of Water supplied for Cultivation of Paddy, &c.—(Continued.)

Month and Date.	Depth of Water flowing over Dam.		For how many Hours.	Total Cubic Feet.	Rainfall.		Remarks.
					In.	Cents.	
7th August 1872.	0	1	24	10,728	0	2½	
8th "	0	2"	24	29,976			
9th "	0	2"	24	29,976			
10th "	0	2"	24	29,976			
11th "	0	2"	24	47,808			
12th "	0	2½	24	55,512	0	2½	
13th "	0	3	24	55,512			
14th "	0	2½	24	42,144			
15th "	0	2½	24	42,144			
16th "	0	2½	24	42,144			
17th "	0	2½	24	42,144			
18th "	0	2½	24	42,144			
19th "	0	2½	24	42,144			
20th "	0	2½	24	42,144			
21st "	0	2½	24	42,144	0	10	
22nd "	0	2½	24	42,144			
23rd "	0	2½	24	42,144			
24th "	0	2½	24	42,144			
25th "	0	2½	24	42,144			
26th "	0	2½	24	35,437	0	10	
27th "	0	2½	24	35,472			
28th "	0	2½	24	35,472	0	60	
29th "	0	2½	24	35,472			
30th "	0	2½	24	35,472	0	10	
31st "	0	2½	24	35,472	0	10	
				35,472	0	80	
Total Aug ..				1,181,791	4	40	
1st Sept. 1872.	0	2½	24	47,808	0	30	
2nd "							
3rd "							
4th "	0	2½	24	47,808			
5th "	0	2½	24	47,808	0	17½	
6th "	0	2½	24	47,808			
7th "	0	2½	24	47,808	0	40	
8th "							
9th "							
10th "	0	2½	24	47,808	0	5	
11th "							
12th "	0	2½	24	47,808	0	5	
13th "	0	2½	24	47,808			
14th "	0	2½	24	47,808			
15th "	0	2½	24	42,144			
16th "	0	2½	24	42,144	0	2½	
17th "	0	2½	12	42,144			
18th "	0	2½		21,072	0	10	
19th "							
20th "	0	2½	24	47,808			
21st "	0	3	24	55,512			
22nd "	0	3	12	27,756	0	20	
23rd "	0	3		27,756	0	40	
24th "					0	10	
25th "							
26th "							
27th "					1	50	
					0	35	

*Proceedings of the Madras Government, Public Works Department,
13th June 1872.*

Record of Water supplied for Cultivation of Paddy, &c.—(Continued.)

Month and Date.	Depth of Water flowing over Dam.		For how many Hours.	Total Cubic Feet.	Rainfall.		Remarks.
					In.	Cents.	
28th Sept. 1872.	0	4½	24	92,160			
29th "	0	4	24	85,008	0	30	
30th "	0	4	24	85,008			
Total Sept...				950,976	3	95	
1st October 1872.	0	4½	24	88,320	0	12	
2nd "	0	4½	24	92,160	0	35	
3rd "	0	4½	24	101,688			
4th "	0	4½	24	95,040			
5th "	0	4½	24	95,040			
6th "	0	4½	24	101,688			
7th "	0	4½	24	101,688			
8th "	0	4½	24	101,688			
9th "	0	4½	24	95,040			
10th "	0	4½	24	92,160			
11th "	0	4	24	85,008			
12th "	0	4	24	88,320	1	80	
13th "	0	4½	24	92,160			
14th "	0	4½	24	95,040			
15th "	0	4½	24	95,040			
16th "	0	4½	24	95,040			
17th "	0	4½	24	95,040			
18th "	0	4½	24	95,040			
19th "	0	4½	24	95,040			
20th "	0	4½	24	92,160			
21st "	0	4½	24	92,160			
22nd "	0	4½	24	92,160			
23rd "	0	4½	24	88,320			
24th "	0	4½	24	88,320			
25th "	0	4½	24	92,160			
26th "	0	4½	24	92,160			
27th "	0	4½	24	92,160			
28th "	0	4½	24	95,040			
29th "	0	4½	24	95,040			
30th "	0	4½	24	95,040			
31st "	0	4½	24				
Total Oct...				2,916,648	2	27	
1st Nov. 1872.	0	4½	24	101,688			
2nd "	0	4½	24	95,040			
3rd "	0	4½	24	95,040			
4th "	0	4½	24	95,040			
5th "	0	4½	24	88,320			
6th "	0	4½	24	88,320	1	90	
7th "	0	4½	12	44,160	0	20	
8th "					4	0	
9th "					0	10	
10th "							
11th "							
12th "	0	4½	24	95,040			
13th "	0	4½	24	92,160			
14th "	0	4½	12	44,160			
15th "							

*Proceedings of the Madras Government, Public Works Department,
13th June 1872.*

Record of Water supplied for Cultivation of Paddy, &c.—(Concluded.)

Month and Date.	Depth of Water flowing over Dam.	For how many Hours.	Total Cubic Feet.	Rainfall.		Remarks.
				In.	Cents.	
16th Nov. 1872.	...					
17th "	0 4½	24	101,688	.....	.....	
18th "	0 4½	24	95,040	.....	.....	
19th "	0 4½	12	50,844	.....	.....	
20th "						
21st "						
22nd "						
23rd "						
24th "						
25th "				0	05	
26th "						
27th "						
28th "						
29th "						
30th "						
Total Nov...			1,181,580	6	25	

ABSTRACT.

Month.	Water supplied, Cubic Feet.	Rain Water Cubic Feet on one Acre.	Rainfall.		
			In.	Cents.	
May ...	109,888	9,038	2	49	·81
June ...	480,195	7,586	2	09	1·57
July ...	1,181,292	30,020	8	27	4·29
August ...	1,181,791	15,972	4	40	3·59
September ...	950,976	14,338	3	95	3·07
October ...	2,916,618	8,240	2	27	7·32
November ...	1,181,580	22,687	6	25	6·09
	8,002,370	107,881	29	72	

Alterations in red made in the Office of the Chief Engineer for Irrigation.
GODAVERY DISTRICT,
4th April 1872.

(Signed) G. T. WALCH,

Executive Engineer No. 3 Range.

(True Copy.)

(Signed)

J. F. FISCHER, Lieut.-Colonel, R.E.,

Acting Superintending Engineer, 1st Division.

No. 201A.

No. 68.

Note by the Acting Chief Engineer for Irrigation.

The Superintending Engineer submits papers relative to an experiment carried out by the Executive Engineer in charge of the Western Delta of the Godavery to ascertain the quantity of water required to bring a rice-crop to maturity.

*Proceedings of the Madras Government, Public Works Department,
13th June 1872.*

2. The Executive Engineer merely tabulates the quantity of water supplied and the quantity of rainfall, but does not reduce the quantities to cubic yards per hour per Acre, and hence does not discover errors in the quantities.

3. The Superintending Engineer deduces from the Executive Engineer's statements that 2·7 cubic yards of water per hour per Acre were used from May to November, but this, apparently, without attempting in any way to check the Executive Engineer's figures, and hence he does not discover that the quantity of rainfall is estimated on one instead of on 21 Acres, the latter being the area on which the experiment was carried out; his deductions are therefore inaccurate.

4. The actual quantities of water supplied per hour per Acre, both artificially and by rain, are noted in the margin;

	C. Yards.	
From 5th May ...	·81	water was first supplied on the 5th May
„ June ...	1·57	for the preparation of the seed-beds, and
„ July ...	4·29	the last supply was obtained on the 20th
„ August ...	3·59	November. It is not stated when the
„ September ...	3·07	crop was transplanted, but probably late
„ October ...	7·32	in June or early in July, and hence the
To 20th Nov. ...	6·09	

average supply during the season must have been about 4·87 cubic yards per hour per Acre—a quantity which is known to be far above what is required.

5. It is not directly stated, but it may be inferred from the Executive Engineer's report that no water was allowed to pass off as surplus, if so, the soil must be of a very porous description, and a large quantity of water must have escaped into the channels which surround the land on which the experiment was tried, and which are probably much below its level, being just below the Perimella Lock and Dam.

6. The water is stated to have been supplied over a weir with a cut-stone crest, not very smooth, 2' long and 1½' broad, it is impossible to calculate accurately the quantity of water passing over such a weir when the depth of water is only from 1" to 4½", and though a tolerably low co-efficient has been used, the quantities deduced are probably far too high as the results prove, supposing the observations to be correct.

7. No attempt is made to afford information on the points adverted to in G. O. No. 30, dated 8th January 1872.

8. If the experiment is again tried on the same plot of ground an iron plate should be introduced into the side of the reservoir with a notch 9" long and 6" or 9" high, as the Executive Engineer suggests, and a shutter should be provided with a padlock and key, so that the supply of water may be stopped at pleasure and the quantity supplied may be correctly ascertained. If surplus water can pass away into the low level channels which surround the land, the quantity which passes off should be measured. If the soil is very porous and large quantities of water percolate through it, the site is not suitable for the experiment.

FORT ST. GEORGE,
15th May 1872.

(Signed)

R. F. OAKES, Captain, R.E.,

Ag. Chief Engineer for Irrigation.

*Proceedings of the Madras Government, Public Works Department,
13th June 1872.*

No. 202.

ORDER THEREON, 13th June 1872, No. 1,458.

IRRIGATION, No. 6.

THE Government regret to observe that another experiment relative to the quantity of water required to bring a rice-crop to maturity has failed owing to the unsuitableness of the vent provided for the supply of water and to the apparent want of interest in the subject on the part both of the Executive and Superintending Engineers, who should have arranged for the accurate measurement of the water, and should have satisfied themselves that the site was a suitable one.

2. The Government having decided that experiments relative to the quantity of water required to bring a rice-crop to maturity shall be carried out in some of the experimental farms which are about to be introduced over the country, the papers noted in the margin will be sent (through the Revenue Department) to Mr. Robertson, the Superintendent of the Farm at Sydapet, for his information.

Govt. of India Order No. 567-I. of 5th October 1871.
G. O., No. 3,668, of 26th Nov. 1867.
" " 1,462, of 15th June 1870.
" " 1,609, of 5th July
" " 915, of 28th March 1871.
" " 30, of 8th Jan. 1872.
" " 872-A., of 30th March
Circular No. 22 of 15th Feb. 1870.
" " 26 of 11th May "

(True Extract.)

(Signed) R. F. OAKES, Captain, R.E.,
Acting Joint Secretary to Government.

To Superintending Engineers.
To the Controller of Public Works Accounts.
" Chief Engineer for Irrigation.
" Revenue Department.

Exd. F. R. Bantleman.

SUPERINTENDING ENGINEER'S OFFICE, 1st DIVISION
DOWLAISHWARUM, 19th April 1872.

No. 266

From

Lieut Colonel J. F. Fisher R.E.
Superintending Engineer

1st Division

To

Major R. F. Oakes R.E.
Chief Engineer for Irrigation

MADRAS

SIR,

I have the honor to forward copy of a letter from the Executive Engineer in Charge of Western Villa Range Godavari District, and its accompaniments regarding the quantity of water used in irrigating 21 acres of land. the average if discharged per hour throughout the season from May to November would be 2.7 Cubic Yards - a much larger quantity than we have found the land to require from several years experience.

2. *As Mr. Walsh states the experiment is not satisfactory, and I would be inclined to support his proposal for employing a Government servant to carefully conduct the Cultivation of some land for this purpose only*

only we are too busy, and have too few hands
to be able to spare any one at present, and the
quantity of water we arrange to supply in the
Wells, 2 Cubic yards per hour per acre, is found
to be sufficient for all purposes including
Navigation.

I have the honor to be

Sir

Your most Obedient Servant

W. T. H. Smith

Chief Engineer, 1st Division

not testfully waste the water in the water works

113

not testfully waste the water in the water works

Note No. 60-18-1872

1872

From

The Superintending Engineer,
First Division.

To

The Chief Engineer for Irrigation
MADRAS

Dated 19th April 1872.

Received 24th April 1872.

No. 206

ENCLO.

Three

Subject.

Forwards Copy of Report
from the Officer in Charge of
No 3 Range Godavery regarding
the quantity of water required
for maturing Paddy Cul-
-tivation in and around



To 3 or Western Delta
No 6 Range Office Narasipore
4th April 1872

From The Executive Engineer in Charge

No 3 or Western Delta Range
Godavery District

To The Superintending Engineer
First Division

Sir,

I have the honor to forward herewith
a Statement of the results of the experiment to
ascertain the quantity of water used in paddy cul-
-tivation. The land is shown on accompanying

plan measures 21 acres and is situated in Regar Class
Class 8 and is assessed at Rs. 2.4.0 an acre.
It lies between the Central Canal and the Pare
-malla Lock Casingal Channel and could not
receive water from any artificial source other
than that specially provided for the experiment.

The Cultivator was allowed to take water
as he wished but was looked after by a Lock
Superintendent who lived near the spot and a
Delta Superintendent who frequently visited
it and they were supposed to see that he did
not wastefully waste the water. The water could not
be

be passed on to other cultivation. The water was passed from the Canal through a small wooden sluice into a basin and thence without any velocity of approach worth considering over a weir with a cut stone (not very smooth) crest 2' long and 1.6" broad. This breadth I consider too great to permit any certainty in the calculated discharges with such small depths as went over (from 0" to 1" to surface of still water) and if the observations are to be continued this year, I would propose to substitute a plate (say $\frac{3}{16}$ Iron) with a notch in it 6" long through which water may flow up to 6" deep.

The crop looked well and the Cultivator states and his statement is believed to be true by the Delta Superintendent that the out-turn was 22 $\frac{1}{2}$ Paddy = 200 bunches of 8 lbs weight each. An average out-turn here is considered to be 1 Paddy (1600 lbs) per acre.

Naturally every Cultivator wishes to make the quantity of water required for his wet cultivation appear as great as possible and there can be little doubt, I think in this case that the quantity of water used has been far in excess of that absolutely required. I do not see much use in indefinite experiments of this kind, and it appears to me that the best way to secure definite and trustworthy results is to rent the piece of land for a term of years and have it cultivated by a paid servant of the Government being prepared if the minimum of water necessary be required

175
required, for short crops for a year or two.

Shaw & Co

Signed / J. P. Walsh
Executive Engineer.

Enclosures

- 1 Statement of water supplied.
- 1 Plan (tracing).

(True Copy)

W. T. Tucker Lieut. Col. R.E.

Asst. Engineer, 1st Division

[Faint, mostly illegible handwritten notes and possibly a table of data spanning the right page.]

1/27/72

P.R. 2460/72

Enclosed in a letter No 266
dated 19th June 1872
referring to the
to the Chief Engineer
of the
Medina

[Faint handwritten notes, possibly bleed-through from the reverse side.]

...want of the Government being necessary
minimum of water necessary *[unclear]* be
required

Godavery District Western Delta
Records of water supplied for Cultivation of paddy
Acres 21 Acres.

Month and date	Depth of water flowing over dam	For how many hours	Total Cubic feet	Rain fall inches	Remarks
1st	"	"	"	"	Length of Acre 2 1/2
2nd	"	"	"	"	Discharge in Cft
3rd	"	"	"	"	per second
4th	"	"	"	"	" = $\sqrt{77} \times .66 \times .48 \times 2.47$
5th	2	6	7494	"	"
6th	"	"	"	"	"
7th	"	"	"	"	"
8th	"	"	"	"	Quantity of seed put in
9th	2 1/2	2	3512	"	400 seed bed 120 Munchams
10th	"	"	"	"	" (one Muncham = 320 Rs
11th	3	2	4626	"	weight) out turn 23
12th	"	"	"	"	120 Patties and paddy = 2500
13th	2 1/2	2	3512	"	Munchams
14th	"	"	"	"	"
15th	2 1/2	3	5268	"	"
16th	2 1/2	3	5268	"	600
17th	2 1/2	3	5268	"	120
18th	"	"	"	"	"
19th	2	24	29976	"	"
20th	2	12	14988	"	Seed bed sown
21st	"	"	"	"	"
22nd	"	"	"	"	"
23rd	"	"	"	"	50
24th	"	"	"	"	"
25th	"	"	"	"	"
26th	"	"	"	"	"
27th	"	"	"	"	150
28th	"	"	"	"	"
29th	"	"	"	"	"
30th	"	"	"	"	"
31st	2	24	29976	"	"
Total May			109888	2	495

Month and date	Depth of water flowing over dam	For how many hours	Total Cubic feet	Rain fall inches	Remarks
1st	"	"	"	"	"
2nd	2	15	48735	"	10
3rd	"	"	"	"	2 1/2
4th	1 1/2	24	19464	"	"
5th	2	24	29976	"	"
6th	2	24	29976	"	"
7th	2	24	29976	"	"
8th	1 1/2	12	14988	"	32
9th	"	"	"	"	"
10th	"	"	"	"	"
11th	"	"	"	"	"
12th	"	"	"	"	"
13th	"	"	"	"	"
14th	1 1/2	24	19464	"	"
15th	2	24	29976	"	"
16th	2	24	29976	"	"
17th	2	24	29976	"	"
18th	2	24	29976	"	"
19th	1 1/2	24	19464	"	"
20th	"	"	"	"	17
21st	"	"	"	"	19
22nd	"	"	"	"	20
23rd	2	24	29976	"	10
24th	2	12	14988	"	"
25th	2 1/2	24	29976	"	"
26th	2	12	14988	"	10
27th	1	24	10728	"	"
28th	1	24	10728	"	"
29th	2	24	29976	"	"
30th	2 1/2	24	42144	"	"
Total June			480195	2	19

July 1872

Month and date	Depth of water flowing over dam	For how many hours	Total Cubic feet	Rain fall
1 st	2"	24	29976	2 1/2
2 nd	3"	24	53512	"
3 rd	"	"	"	1 30
4 th	2"	24	29976	"
5 th	2"	24	29976	"
6 th	2"	24	29976	"
7 th	2"	24	29976	10
8 th	2"	24	29976	02 1/2
9 th	2"	24	29976	"
10 th	3"	24	53512	"
11 th	3"	24	53512	2 1/2
12 th	3"	24	53512	"
13 th	3"	24	53512	"
14 th	3"	24	53512	1 10
15 th	"	"	"	60
16 th	"	"	"	12 1/2
17 th	3"	24	53512	12 1/2
18 th	3"	12	27756	1 25
19 th	"	"	"	92 1/2
20 th	3"	24	53512	25
21 st	3"	24	53512	27 1/2
22 nd	3"	24	53512	7 1/2
23 rd	3"	24	53512	20
24 th	3"	24	53512	2 1/2
25 th	3"	24	53512	"
26 th	3"	24	53512	27
27 th	3"	24	53512	80
28 th	"	"	"	20
29 th	"	"	"	"
30 th	3"	24	53512	"
31 st	3"	24	53512	"
Total July			1181292	8 23 1/2

Month and date	Depth of water flowing over dam	For how many hours	Total Cubic feet	Rain fall
1 st	2"	24	29976	2 1/2
2 nd	3"	24	53512	"
3 rd	2 1/2"	24	42144	"
4 th	2 1/2"	24	42144	"
5 th	2"	24	29976	"
6 th	1"	24	10728	52 1/2
7 th	1"	24	10728	2 1/2
8 th	2"	24	29976	"
9 th	2"	24	29976	"
10 th	2"	24	29976	"
11 th	2 1/4"	24	47808	2 1/2
12 th	3"	24	53512	"
13 th	3"	24	53512	"
14 th	2 1/2"	24	42144	"
15 th	2 1/2"	24	42144	"
16 th	2 1/2"	24	42144	"
17 th	2 1/2"	24	42144	"
18 th	2 1/2"	24	42144	"
19 th	2 1/2"	24	42144	10
20 th	2 1/2"	24	42144	"
21 st	2 1/2"	24	42144	"
22 nd	2 1/2"	24	42144	"
23 rd	2 1/2"	24	42144	"
24 th	2 1/2"	24	42144	"
25 th	2 1/4"	24	38432	10
26 th	2 1/4"	24	38472	"
27 th	2 1/4"	24	38472	60
28 th	2 1/4"	24	38472	"
29 th	2 1/4"	24	38472	10
30 th	2 1/4"	24	38472	10
31 st	2 1/4"	24	38472	80
Total August			1181856	4 40

Month and date.	Depth of water flowing over dam	For how many hours	Total Cubic feet.	Rain fall
1st	2 3/4	24	47808	30
2nd	"	"	"	"
3rd	"	"	"	"
4th	2 3/4	24	47808	"
5th	2 3/4	24	47808	"
6th	2 3/4	24	47808	17 1/2
7th	2 3/4	24	47808	40
8th	"	"	"	"
9th	"	"	"	"
10th	2 3/4	24	47808	"
11th	"	"	"	"
12th	2 3/4	24	47808	"
13th	2 3/4	24	47808	"
14th	2 1/2	24	42144	"
15th	2 1/2	24	42144	2 1/2
16th	2 1/2	24	42144	"
17th	2 1/2	12	21072	10
18th	"	"	"	"
19th	2 3/4	24	47808	"
20th	3	24	55512	"
21st	3	12	27756	20
22nd	3	12	27756	40
23rd	"	"	"	10
24th	"	"	"	45
25th	"	"	"	11
26th	"	"	"	50
27th	"	"	"	35
28th	4 1/4	24	92160	"
29th	4	24	85008	30
30th	4	24	85008	"
Total September			950976	595

Month and date.	Depth of water flowing over dam.	For how many hours	Total Cubic feet	Rain fall
1st	4 1/8	24	88320	12
2nd	4 1/4	24	92160	35
3rd	4 1/2	24	101688	"
4th	4 3/8	24	95040	"
5th	4 3/8	24	95040	"
6th	4 3/8	24	101688	"
7th	4 1/2	24	101688	"
8th	4 1/2	24	101688	"
9th	4 1/2	24	101688	"
10th	4 3/8	24	95040	"
11th	4 1/4	24	92160	"
12th	4	24	85008	"
13th	4 1/8	24	88320	20
14th	4 1/4	24	92160	"
15th	4 3/8	24	95040	"
16th	4 3/8	24	95040	"
17th	4 3/8	24	95040	"
18th	4 3/8	24	95040	"
19th	4 3/8	24	95040	"
20th	4 3/8	24	95040	"
21st	4 1/4	24	92160	"
22nd	4 1/4	24	92160	"
23rd	4 1/4	24	92160	"
24th	4 1/8	24	88320	"
25th	4 1/8	24	88320	"
26th	4 1/4	24	92160	"
27th	4 1/4	24	92160	"
28th	4 1/4	24	92160	"
29th	4 3/8	24	95040	"
30th	4 3/8	24	95040	"
31st	4 3/8	24	95040	"
Total Oct.			2916648	227

Month and date	Depth of water flowing over dam	For how many hours	Total Cubic feet	Rain fall	Inches	Cents
1 st	4 1/2	24	101688			
2 nd	4 3/4	24	95040			
3 rd	4 3/4	24	95040			
4 th	4 3/4	24	95040			
5 th	4 3/4	24	95040			
6 th	4 3/4	24	88320			
7 th	4 3/4	24	88320		90	
8 th	4 3/4	12	44160		20	
9 th	"	"	"		"	
10 th	"	"	"		10	
11 th	"	"	"		"	
12 th	"	"	"		"	
13 th	4 3/4	24	95040		"	
14 th	4 3/4	24	92160		"	
15 th	4 3/4	12	44160		"	
16 th	"	"	"		"	
17 th	"	"	"		"	
18 th	4 1/2	24	101688		"	
19 th	4 3/4	24	95040		"	
20 th	4 1/2	12	50844		"	
21 st	"	"	"		"	
22 nd	"	"	"		"	
23 rd	"	"	"		05	
24 th	"	"	"		"	
25 th	"	"	"		"	
26 th	"	"	"		"	
27 th	"	"	"		"	
28 th	"	"	"		"	
29 th	"	"	"		"	
30 th	"	"	"		"	
Total November			1181580	6	25	

November 1872

Abstract

Month	Water supplied Cubic feet	Rain water Cubic feet	Rain fall	Inches	Cents
May	4070	109888	9040	2	49
June	17785	480195	7590	2	09
July	112751 1/2	1181292	29950	8	27
August	112770	1181855	15972	4	40
September	112770	950976	21600	5	95
October	112770	2916648	8170	2	27
November	112770	1181580	22690	6	25
Total			8082435	31	72
			50217	29	

Wm. M. D. Range
Godfrey (District)
4th April 1872

Signed / J. S. Welch
Superintendent Engineer No 3 Range

(True Copy)

Wm. T. Walker Lieut. Col. R.E.
Adj. Supt. Engineer 1st Division

N^o 68

Note by the Ag. Chief Engineer for Irrigation

Encls. 4.

The Superintending Engineer submits papers for
 latine to an experiment carried out by the Exec-
 tive Engineer in charge of the western Delta of the
 Godavari to ascertain the quantity of water required
 to bring a Rice Crop to maturity.

2. The Executive Engineer merely tabulates the
 quantity of water supplied and the quantity of rain
 fall but does not reduce the quantities to cubic yards
 per hour per acre and hence does not discover errors in
 the quantities.

3. The Superintending Engineer deduces from
 the Executive Engineer's statements that 2.7 cubic
 yards of water per hour per acre were used from May
 to November, but this, apparently, without attempting
 in any way to check the Executive Engineer's figures
 and hence he does not discover that the quantity of
 rain fall is estimated on one instead of on 20 acres,
 the latter being the area on which the experiment
 was carried out - his deductions are therefore inaccurate.

rate.

4. The actual quantities of water supplied per hour per acre both artificially and by rain are noted in the margin; water

was first supplied on the 5th May for the preparation of the seed beds and the last supply was obtained on the 20th November. It is

From 5 th May	to 20 th November	culic yards
May		81
June		1.57
July		4.29
August		3.59
September		3.07
October		7.32
		6.09

not stated when the Crop was transplanted but probably late in June or early in July and hence the average supply during the Season must have been about 4.87 cubic yards per hour per acre.

Q. Quantity which is known to be far above what is required.

5. It is not directly stated but it may be inferred from the Executive Engineer's Report that no water was allowed to pass off as surplus, if the soil must be of a very porous description and a large quantity of water must have seeped into the channels which surround the land on which the experiment was tried and which are probably

probably much below its level, being just below the Perimella Lock and Dam.

6. The water is stated to have been supplied over a floor with a cub stone crest, not very smooth, 2' long and 1 1/2' broad; it is impossible to calculate accurately the quantity of water passing over such a floor when the depth of water is only from 1 to 1 1/2 and though a tolerably low coefficient has been used the quantities deduced are probably far too high as the facts prove, supposing the observations to be correct.

7. No attempt is made to afford information on the points adverted to in G.O. No. 30 dated 8th January 1872.

8. If the experiment is again tried on the same Plot of ground an iron plate should be introduced into the side of the reservoir with a notch 9' long and 6 or 9' high, as the Executive Engineer suggests, and a shutter should be provided with a Padlock and Key, so that the supply of water may be stopped at pleasure and the quantity supplied may be correctly ascertained.

P. W. 1872 Defile
From 1910 No. 2460

The Ag. Chief
Engineer for Irrigation

To
The Secretary to
Govt. Wd

N. 68.

Dated 15th 3
Sept 20th 3 May 72
Recd 3

Encls. 4

Note on an experiment
carried out by the Executive
Engineer in charge of the
Western Delta of the Godavari
-very to ascertain the quan-
tity of water required to
bring a Rice Crop to maturity
No. 1458-13 June 1912

No. 201

2275
c. 22nd May 1872 Ca. 23rd

Public Works Department

No. 1458
Proceedings of the Madras Govt.

Read the following

From
The Ag. Chief Engineer
for Irrigation

H. O. No. 68 of 15 May 1912

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

the part both of the Executive and Superintending Engineers who should have arranged for the accurate measurement of the water and should have satisfied themselves that the site was a suitable one.

The Government having decided (and of opinion) that the experiments relative to the quantity of water required to bring a Rice crop to maturity ^{shall} be carried out on a small scale in the experimental farms which are about to be introduced over the Country [and they relative to forward] the

noted in the margin

This has been decided in Res. Sec. I shall etc. as in margin.

papers noted in the margin to Mr. Robertson
 P.O. No 567 I of 5th Oct 1871
 P.O. No 3668 of 26th Nov 1871
 P.O. No 1462 of 15th June 1870
 P.O. No 1609 of 5th July 1870
 P.O. No 915 of 28th March 1871
 P.O. No 30 of 8th January 1872
 P.O. No 872 A of 30th March 1872
 Circular No 22 of 15th Feb 1870
 Circular No 26 of 11th May 1870
 This cannot be it will be 2 yrs at least before the farms are sown
 The Superintendent of the Farm at Hyderabad for his information
 (with a view to his undertaking the experiment during the next cultivating season if possible.)

A. F. G. G. W.

200
 12

To The Supt Engineer
 " Controller
 " Ch Engineer for Irrigation
 " Rev. Secy to the Govt
 noted in the margin
 Des. No 186/72.

Mr 2460

Govt. of 1872 Madras.

PUBLIC WORKS. ✓

To

Superintending Engineer

Dated

Recd.

Encl. 1

G. O. 13th June 72, No 1458.

Nos. 2018 202

Rice Cultivation. Paper
Orders on note by the Ag.
Chief Eng for irrigation in
the experiment carried out
in the Kadaney D. for
ascertaining the quantity
of water required for
Rice Cultivation.