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MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

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Dated 16. 6. 1866.	

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**Proceedings of the Madras Government, Public Works Department,
16th June 1866.**

No. 356. Read the following letter from the Superintending Engineer, 6th Division, to the Secretary to Government, Department Public Works, dated Tanjore, 25th May 1866, No. 133:—

1. With reference to Memorandum
No. 11 and G. O. No. 597, dated 20th

February, I have the honor to enclose two diagrams showing the highest freshes in the Cauvery and Coleroon during the last twenty years.

2. From an examination of these diagrams, it will be observed that from 1816 to 1857 the water rose above 10 feet over the Cauvery dam at the Upper Anicut only in three years, viz., 1848, 1850, and 1851, while the duration of the floods above 10 feet varied from half to threedays. 1858 was an exceptional year,

July 1848, 2 days above 10 feet mark.	
July 1850, 3 do.	do.
Nov. " 1 do.	do.
July 1851, 1 do.	do.

when the floods in July failed, but those in October and November rose to an unprecedented height, and were 6½ and 2 days respectively above 10 feet over the Cauvery dam; the rise in November was very sudden, viz., from 5 to nearly 13½ feet in 24 hours. From 1859 to 1865 there were only two years in which the water did not rise above 10 feet over the Cauvery dam, viz., 1860 and 1861, and in 1859, 1864, and 1865

July 1859, 6 days over 10 feet mark.	
Oct. 1862, 1½ do.	do.
June 1864, 2½ do.	do.
July 1861, 7 do.	do.
July 1865, 11 do.	do.

the freshes were remarkable not only for their height, but for their duration lasting 6, 7, and 11 days respectively, though for 2½ days out of the 11 the water fell ¼ feet below the 10 feet mark.

3. Though the floods have been higher from 1859 to 1865 than they were from 1816 to 1857, owing to the duration of the floods during the former years having far exceeded that of the floods of the latter, and owing also to the fact that the height of water at the Cauvery dam throughout the season, as exhibited in Statement B, from 1856 to 1865, has differed, but little from that from 1816 to 1855. It must be concluded that the high floods of late years are attributable rather to a greater fall of rain than to the clearance of the catchment basin.

4. It is worthy of observation that the trifling falling off in the height of water throughout the season, from 1856 to 1865, when compared with that from 1816 to 1855, is to be found during the north-east monsoon rather than the south-west; in the latter the floods depend almost entirely upon the rain-fall in the portion of the catchment basin which is being denuded of its forests, while in the former the floods depend chiefly on the rain which falls in the plains.

5. In 1864 it will be observed that, the height of water in August was above the average, and though in the same month, in 1865, the water was rather below the average, the freshes came down earlier than usual in 1865, and the duration of the floods does not appear to have been curtailed. The clearance of the hills, so far as they have gone, have not appreciably affected the Cauvery irrigation.

6. There are no reliable water returns of an earlier date than 1844, but from the diaries formerly kept by the Officers in this Division, it would appear that the freshes were unprecedentedly high in

1814.

1818 } Sir A. Cotton estimates damage to Government and people at
1819 } Rupees 8,00,000.

1821—One of the breaches was open for 20 days notwithstanding the presence of the Collector and 3,000 coolies.

In 1827 } Sir A. Cotton estimates the fresh as about 1½ feet below that
1832 } of 1819.

In 1840—The water at Seringham head was 11 feet 10 inches. Except in the last case no figures are given to show the height of the floods adverted to or their duration.

7. The diagrams have been prepared and the information given above has been afforded by Captain Mead, who is investigating a project for the improvement of the Cauvery irrigation, and who has prepared the following Statements:—

A. A Statement of the height of the freshes in the Coleroon and Cauvery for the last twenty years.

B. Do. do. showing the height of water at the Cauvery dam for each month for the last twenty years.

C. Do. do. showing the approximate quantity of water which enters the District at different heights on the gauge at the Cauvery dam, and how it is disposed of.

D. Do. do. showing the volume of water required to be stored to maintain a depth of 5 feet of water over the Cauvery dam for three and four months, and the quantity available for storage if all waters above floods of 8 and 9 feet over the Cauvery dam were arrested and retained in reservoirs.

8. Five feet of water over the Cauvery dam ought to afford a full and sufficient supply to the irrigation dependent on the Cauvery. The first great branch from the Cauvery is the Vennar, and though the cultivation below the point of bifurcation under these rivers bears the proportion of about 9 to 10, the water way over the

Cauvery 93½ feet.
Vennar 55½ ..

respective dams is nearly 7 to 4. So that the Cauvery receives far more than its share of water, and yet owing to the

defective state of the river the Myavram Taluq does not receive a sufficient supply unless 7 feet of water are flowing over the Cauvery dam, or until the District is receiving nearly double the supply it ought to require, and even then, a portion of the Shealli Taluq receives but a very scanty supply. The cultivation in this Taluq, I should, however, mention, is and always has been in a great measure dependent upon local rain during the north-east monsoon for its supply of water.

9. A reference to columns 4 and 5 of Statement D, showing the volume of water available for storage above freshes of 7 feet and 8 feet at the Cauvery dam, considered in connexion with the duration of the floods during late years, will indicate the impossibility of forming reservoirs on the hills capable of materially influencing

the high floods in the District, and thus preventing the occurrence of breaches, &c.

* Area of Reservoirs 26 square miles, with an average depth of 10 yards.

Works for this purpose must be constructed in the delta itself. But reservoirs* for storing water for purposes of

irrigation capable of containing 800,000,000 cubic yards of water would be invaluable. During the past ten years such reservoirs by retaining all water over 8 feet above the Cauvery dam in July and that above 7 feet in August in bad years, could have been filled every year with the exception of 1858, when the south-west monsoon failed, and could have maintained a permanent depth of 5 feet of water on the Cauvery dam for four months in 1859 and 1862, for three and a half months in 1856, 1857, 1860, 1863, 1864, and 1865, and for nearly three months in 1861, and this not by robbing the District of its water when the floods were low, but by relieving it of some of the superfluous water it did not require when the floods were high, they would have tended to prevent injury to the river banks in the delta.

No. 357.

ORDER THEREON, 16th June 1866, No. 1,894.

CIVIL WORKS, No. 58.

1. The question raised by Colonel Lawford of the effect which the denudation of the tracts of forests in Coorg

and other parts of the upper catchment basin of the river Cauvery has had in augmenting the magnitude of the floods in that river, and in proportionately shortening the time of their duration, having been brought under the notice of this Government by the Government of India, the Superintending Engineer of the 6th Division was called upon to report upon the matter from the information obtainable from the records of his Office.

2. Captain Oakes now submits a full report on the subject, with returns to show the height to which the freshes attained during the twenty years from 1846 to 1865, inclusive, and the length of time which each fresh continued at a given level. From an analysis of these it appears that for the last ten years of the period the floods have been heavier than during the first ten years, and so far Colonel Lawford's theory would appear to be borne out; but, as these heavy floods chiefly occurred during the north-east monsoon, which does not extend into the Districts in which the clearance of forests has been going on, and as their duration was also greater during the latter than during the former years, the Superintending Engineer seems to be right in attributing these greater floods in the river simply to an accidental increase in the amount of rain-fall.

3. The Government are not prepared to say that Colonel Lawford's supposition is without foundation, and they have no doubt that locally the effect of the destruction of the jungles is perceptible, but there is nothing before them to show that the clearances in the upper basin of the Cauvery have been sufficiently extensive to influence the river so far from the localities in which they were made as Tanjore. To bear out this view the Government have only further to remark that the heaviest floods ever known to have happened in Tanjore occurred early in the century, long before coffee planting and its accompanying clearances were introduced, and that no flood of such height as to cause serious damage has occurred since 1858, which would scarcely have been the case if clearing away the jungles has had the effect which Colonel Lawford imagines.

Proceedings of the Madras Government, Public Works Department,
16th June 1866

4. The Government are much pleased with the completeness of the returns submitted. The wet cultivation in the Tanjore District commences with the early freshes in June, and by the end of August the whole of the wet lands in the Delta are under crop, and it is therefore of paramount importance that there should be no failure in the supply of water at that season; but during the month of September and the early part of October, the break between the two monsoons occurs, when the rains of the south-west monsoon have ceased to fall and those of the north-east monsoon have not commenced, and it consequently happens that, in unfavorable years, the crops suffer much from drought. The Superintending Engineer shows that, with the single exception of the year 1838, in which the south-west monsoon failed, there has always been a sufficient quantity of water passing down the river during the months of July and August to have admitted of 8,000 millions of cubic yards being stored not only without robbing the cultivation of its supply, but also with the advantage of relieving the river of a part of its surplus water at times when the floods were so high as to endanger the banks, and, further, that this quantity of water would have been sufficient to have maintained an average depth of water over the Cauvery dam for four months in the year 1853 and 1862, and for three months in 1856, 57, 60, 63, 64, and 1865. These are most valuable data, and will be of much use to the Government when the question of storing water in the upper valleys of the Cauvery and its tributaries is under consideration.

5. The Superintending Engineer states that although five feet of water over the Cauvery dam ought to afford a full and sufficient supply for the irrigation dependent on the Cauvery, yet, owing to the defective state of the river bed, the Eastern Taluqs do not receive a sufficient supply until there is seven feet passing over the dam. It is observed that, with five feet over the dam, 3,10,000, and with six feet 13,55,000 cubic yards of water per hour are permitted to escape into the Coleroon. Captain Oakes is requested to consider whether, with due regard to the rights of the cultivation under the Mannayur and the Lower Anicut, it would not be desirable to utilize the greater part of this water by raising the Tamboghy in the south branch of the Upper Anicut, and thus raise the number of days during the south-west monsoon on which sufficient water for the irrigated lands dependent on the Cauvery enters that river, from an average of twenty yearly up to more than sixty days. Relief to an equivalent extent might be offered to the Cauvery during floods by increasing the number of under-sluiques in the anicut itself, or in one of the works for the discharge of surplus water constructed in the Cauvery north bank.

(True Extract.)

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

To the Superintending Engineer, 6th Division.
.. Revenue Department.

Erd. S. T. Augustin.

112/133-

Superintending Engineer's Office
Tanjore 25 May 1866-

From,

Captain P. J. Oakes R.E.

Superintending Engineer.

To,

Colonel C. A. Orr R.E.

Secretary to Government.

Sir,

30th January

With reference to Memo 1211

and G.O. 16597 dated 20 February, I have the honor to enclose 2 Diagrams showing the highest freshes in the Cauvery and Coleroon during the last 20 years.

2. From an examination of these Diagrams, it will be observed that from 1846 to 1857 the water rose above 10' over the Cauvery Dam at the Upper Anicut only in three years - viz 48, 50 and 51 while the duration of the flood above 10' varied from $\frac{1}{2}$ to 3 days - 1858 was an exceptional year when the flood in July

July/48. 2 days above 10' mark.

July/50. 3 "

November/50. 1 "

July/51. $\frac{1}{2}$ "

an exceptional year when the flood in July

July failed but those in October and November rose to an unprecedented height and were 6½ and 2 days respectively above 10' even the Curry Dam; the rise in November was very sudden viz from 5 to nearly 13¼ in 24 hours - From 1859 to 1865 there were only 2 years in which the water did not rise above 10' even the Curry Dam viz 1860 and 61 and in 1859-64 & 65 the freshes were

remarkable not only for their height but for their duration lasting 6, 7 & 11 days respectively though for 2½ days out of the 11 the water fell ¾ below the 10' mark.

July 59 - 6 days over 10' mark	October 62 - 1½ "
	June 63 - 2½ "
	July 64 - 7 "
	July 65 - 11 "

3 - Though the floods have been higher from 1859 to 65 than they were from 46 to 57, owing to the duration of the floods during the former years having exceeded that of the floods of the latter, and owing also to the fact that the height of water at the Curry

Curry Dam throughout the season as exhibited in Statement B. from 1856, to 1865 ^{has} differed but little from that from 46 to 55, It must be concluded that the high floods of late years are attributable rather to a greater fall of rain than to the clearance of the Catchment basin.

Statement.
B.

4 - It is worthy of observation that the trifling falling off in the height of water throughout the season from 56 to 65 when compared with that from 46 to 55 is to be found during the N.E. Monsoon rather than the South West in the latter the flood depends almost entirely upon the rain fall in the portion of the Catchment basin which is being denuded of its forests, while in the former the flood depends chiefly on the rain which falls in the plains.

5 - In 1864 it will be observed that the height of water in August was above the average, and though in the same month in 1865 the water was rather

rather below the average, the fresher
came down earlier than usual in 1865
and the duration of the flood does not
appear to have been curtailed. The
Clearance of the Hills so far as they
have gone have not appreciably affected
the Canery Irrigation.

6. There are no reliable water
returns of an earlier date than 1844
but from the Diaries formerly kept
by the Officers in this Division it would
appear that the fresher were unpre-
cedentedly high in.

1814.

1818 } Sir A Cotton Estimates damage to
1819 } Government & people at Rupee 50,000

1824. One of the Breaches was open
for 20 days notwithstanding the
presence of the Collector and
3000 Coolies.

in 1827 } Sir A Cotton Estimates the Fresh
1832 } as about 12' below that of 1814.

In 1840. The water at Bingham had
was 11' 10" Except in the inch
Case no figures are given to show
the

9
the height of the flood & admitted to
on their duration.

7. The Diagrams have been pre-
pared & the information given above
has been afforded by Captain Mead
who is investigating a Project for the
improvement of the Canery Irrigation
& who has prepared the following
Statements.

A. a Statement of the height of the
fresher in the Coleroon & Canery
for the last 20 years.

B. Do Do showing the height of
water at the Canery Dam for
each month for the last 20 years.

C. Do Do showing the Approximate
quantity of water which enters
the District at different heights
on the Gauge at the Canery Dam
and how it is disposed of.

D. Do Do showing the Volume of
Water required to be stored to
maintain a depth of 5' of Water
over the Canery Dam for 3 & 4
months

months and the quantity available for storage if all water above flood of 8' & 9' over the Cauvery Dam were arrested & retained in Reservoirs.

8 - Five feet of water over the Cauvery Dam ought to afford a full & sufficient supply to the Irrigation dependent on the Cauvery. The first fresh Branch from the Cauvery is the Vaman and though the Cultivation below the point of bifurcation under these Rivers bears the proportion of about 9 to 10 the water way even the prospective Dams is nearly 7 to 4. So that the Cauvery receives far more than its share of water and yet owing to the defective state of the River the Myanam Salug does not receive a sufficient supply unless 7' of water are flowing over the Cauvery Dam or until the District is receiving nearly double the supply it ought to require, and even then a portion of the Salug receives but a very scanty supply. The Cultivation in this Salug, should however, be

Area of Reservoir 26 Square Miles with an average depth of 10. yards.

* Area of Reservoir 26 Square Miles with an average depth of 10. yards.

is and always has been in a great measure dependent upon local rain during the North East Monsoon for its supply of water.

9 - A reference to Columns 4 & 5 of Statement D, showing the volume of water available for storage above freshes of 7' & 8' at the Cauvery Dam. Considered in connexion with the duration of the Floods during late years will indicate the impossibility of forming Reservoirs on the Hills capable of materially influencing the high floods in the District and thus preventing the occurrence of Breaches &c. Works for this purpose must be constructed in the Delta itself - But Reservoirs for storing water for purposes of Irrigation capable of containing 80,000,000 Cubic yards of water would be invaluable. During the past 10 years such Reservoirs by retaining all water over 8' above the Cauvery Dam in July and that above 7' in August in bad years, could

Could have been filled every year with the exception of 1858 when the South West Monsoon failed & could have maintained a permanent depth of 5' of Water on the Cauvery Dam for 4 months in 1859 & 1862 for 3½ months in 1856 - 57 - 60 - 63 - 64 & 65 and for nearly 3 months in 1861, and this not by robbing the District of its Water when the Floods were low but by relieving it of some of the superfluous water it did not require when the Floods were high they would have tended to prevent injury to the River banks in the Delta.

I have the honor to be
 Sir,
 Your Most Obedt Servt
 W. T. D. A. S. P. L. A. S.
 Superintending Eng^r & J^r

13

not up with was in	5	6	7	8	9	10	11	12	13
31	25	3	1	-	-	-	-	-	9
28	21	9	4	-	-	-	-	-	9
31	14	-	-	-	-	-	-	-	12
31	18	13	6	3	-	-	-	-	-
31	23	4	3	1	-	-	-	-	-
31	19	11	5	-	-	-	-	-	-
31	31	18	7	3	-	-	-	-	-
17	4	-	-	-	-	-	-	-	-
31	25	17	10	2	-	-	-	-	-
31	29	19	13	3	-	-	-	-	-
18	7	-	-	-	-	-	-	-	-
30	19	7	3	1	-	-	-	-	-
27	21	13	10	7	-	-	-	-	-
22	16	11	8	-	-	-	-	-	-

	22/6/11 8 . .																													
3	30	30	30	12	8	7	7	5	4	1	31	31	31	31	31	24	17	8	2	1	31	31	31	31	31	22	11	8	7	
4	30	30	30	29	16	7	3	-	-	-	31	31	31	29	22	18	14	11	8	7	31	31	31	31	31	25	1	-	-	-
5	30	30	30	19	5	-	-	-	-	-	31	31	31	29	29	26	16	14	13	10	31	31	31	31	22	16	6	-	-	-
10 years	30	28	24	16	9	4	2	-	-	-	31	30	30	29	24	16	10	5	2	1	31	31	30	30	27	19	8	4	1	-
6 to 55	30	28	23	17	10	5	2	-	-	-	31	30	30	29	24	17	11	5	2	-	31	31	31	30	28	19	7	3	-	-
56 to 65	30	29	26	16	8	4	2	-	-	-	31	31	30	29	23	16	9	5	3	2	31	31	30	29	23	20	9	5	2	-

W. T. D. A. S. P. L. A. S.
 28th April 1866
 Sup^r of Bangalore office
 Bangalore 25th May 1866

Could have been filled every year with the exception of 1858 when the South

Wash - 20th July 1866 no. 597
 of 5' of Copy in a letter to England
 for 4 25th Sept. 1866 of 1866

Month
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Paper for
 Under Sec
 by 1855
 29th June 1866 Dr. G.D.

W.T. Wakeham Esq.
 Superintending Eng^r 26th J^y

From 1846 Dept
 No. 2218.
 The Sup^r & Eng^r
 G.H. J^r
 The Secretary to
 Government
 D.P.M.

Dated 25th
 Received 29th May 66

No. 133
 By 6
 1894 - 16 days
 towards enclosed
 Diagram showing
 the highest freshes
 in the River and
 above during the
 last 20 years

Year	June No of days water was over										July No of days water was over										August No of days water was over									
	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
1846	30	30	30	27	20	3	2	-	-	-	31	31	31	31	31	24	18	8	1	-	31	31	31	31	31	25	3	1	-	-
1847	30	30	30	30	10	5	4	-	-	-	31	31	31	31	31	18	15	3	1	-	31	31	31	31	28	21	9	4	-	-
1848	30	30	30	24	13	7	-	-	-	-	31	31	31	31	18	14	10	7	5	2	31	31	31	31	31	14	-	-	-	-
1849	30	30	28	9	8	7	6	3	-	-	31	31	31	31	25	6	2	1	-	-	31	31	31	31	31	18	13	6	3	-
1850	30	30	25	21	16	10	1	-	-	-	31	31	31	31	25	17	13	11	4	3	31	31	31	31	31	23	4	3	1	-
1851	30	30	19	18	9	5	2	-	-	-	31	31	31	28	16	16	13	10	5	1	31	31	31	31	31	19	11	5	-	-
1852	30	30	23	10	9	8	5	-	-	-	31	31	31	31	31	30	17	7	2	-	31	31	31	31	31	31	18	7	3	-
1853																														
1854																														
1855	30	30	16	-	-	-	-	-	-	-	31	29	28	25	21	15	3	-	-	-	31	31	31	30	17	4	-	-	-	-
1856	30	30	30	30	19	13	6	1	-	-	31	31	31	31	18	10	2	-	-	-	31	31	31	31	31	25	17	10	2	-
1857	30	30	30	22	13	8	6	3	-	-	31	31	31	31	26	13	3	-	-	-	31	31	31	31	31	29	19	13	3	-
1858	30	25	14	6	2	-	-	-	-	-	31	31	27	22	17	8	5	2	-	-	31	31	28	22	18	7	-	-	-	-
1859	30	30	20	16	9	6	1	-	-	-	31	31	31	30	15	13	12	11	8	6										
1860	30	30	30	17	7	1	-	-	-	-	31	31	31	27	20	8	7	6	1	-	31	31	31	31	30	19	7	3	1	-
1861	30	30	30	14	4	1	-	-	-	-	31	31	31	31	31	24	15	5	2	-	31	31	31	31	27	21	13	10	7	-
1862	30	30	17	1	-	-	-	-	-	-	31	31	30	29	29	18	4	-	-	-	31	31	31	30	22	16	11	8	-	-
1863	30	30	30	12	8	7	7	5	4	1	31	31	31	31	31	24	17	8	2	1	31	31	31	31	31	22	11	8	7	-
1864	30	30	30	29	16	7	3	-	-	-	31	31	31	29	22	18	14	11	8	7	31	31	31	31	31	25	1	-	-	-
1865	30	30	30	19	5	-	-	-	-	-	31	31	31	29	29	26	16	14	13	10	31	31	31	31	22	16	6	-	-	-
Average 20 years	30	28	24	16	9	4	2	-	-	-	31	30	30	29	24	16	10	5	2	1	31	31	30	30	27	19	8	4	1	-
Average 1846 to 55	30	28	23	17	10	5	2	-	-	-	31	30	30	29	24	17	11	5	2	-	31	31	31	30	28	19	7	3	-	-
Average 1856 to 65	30	29	26	16	8	4	2	-	-	-	31	31	30	29	23	16	9	5	3	2	31	31	30	29	23	20	9	5	2	-

Recd The Ottawa gov^y
 28th April 1866
 Sup^r Eng^r & office 1st
 London 25th May 1866

Statement showing the height of the water in the Locking regulating dam Leringham for each month for the last 20 years.

Month soon after the 3 months of days water was over	September No of days water was over	October No of days water was over	November No of days water was over	December No of days water was over	W.D. Thompson Total for the 4 months No of days water was over	Total for the Season Number of days was over
3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10
92 89 82 52 23 9 1 -	30 30 30 30 23 - - - -	31 31 31 31 28 24 12 3 - -	30 30 11 1 - - - -	31 24 7 2 - - - -	122 115 79 64 51 24 12 3 - -	214 207 171 133 133 76 35 12 1 -
92 92 69 44 28 7 1 -	30 30 30 30 26 10 - - - -	31 31 31 30 25 18 8 3 1 -	30 30 30 30 15 10 6 - -	31 31 31 31 16 5 4 - -	122 122 122 121 85 43 18 3 1 -	214 214 214 213 154 87 46 10 2 -
92 86 62 35 10 7 5 2	30 30 30 30 30 14 - - - -	31 31 31 29 20 5 1 - - -	30 30 30 30 19 11 5 - - -	31 31 31 - - - - -	122 122 122 78 61 24 1 - - -	214 214 214 164 123 59 11 7 5 2
90 71 64 31 21 10 3 -	30 30 30 30 30 14 8 5 4 -	31 31 31 31 31 15 3 - - -	30 30 30 23 14 2 - - -	31 31 3 - - - - -	122 122 94 54 75 36 11 5 4 -	214 214 184 155 139 67 32 15 7
88 83 72 50 18 14 5 3	30 30 30 30 29 12 2 - - -	31 31 31 31 31 29 18 8 3 -	30 30 30 30 21 12 8 7 4 1	31 31 31 21 3 - - - -	122 122 122 112 87 53 28 15 7 1	214 214 210 195 159 103 46 29 12 4
81 77 56 40 26 15 5 1	30 30 30 30 25 7 - - - -	31 31 31 24 13 1 - - - -	30 30 29 10 7 4 1 - - -	31 31 3 - - - - -	122 122 95 64 45 12 1 - - -	214 214 176 141 101 52 27 15 5 1
85 72 71 69 40 14 5 -	30 30 30 30 30 23 13 4 -	31 31 31 31 31 21 14 5 2 2	30 30 30 23 5 - - - -	- - - - -	122 119 106 84 66 44 27 9 2 2	214 211 191 156 137 113 67 23 7 2
59 55 38 19 3 - - - -	30 30 30 26 13 4 - - - -	31 31 31 31 23 14 4 - - -	29 18 11 4 - - - -	30 20 12 5 2 - - - -	120 99 84 65 38 18 4 - - -	214 175 143 121 76 37 7 - - -
92 92 68 48 25 11 2 -	30 30 30 30 16 8 2 - - - -	31 31 31 31 16 8 - - - -	30 30 19 3 - - - -	31 30 1 - - - - -	122 121 81 64 32 16 2 - - -	214 213 173 156 100 64 27 11 2 -
92 84 70 50 28 16 3 -	30 30 30 19 13 1 - - - -	31 31 31 27 18 10 5 4 1 -	30 30 18 9 5 - - - -	31 12 - - - - -	122 103 79 55 36 11 5 4 1 -	214 195 171 139 106 61 33 20 4 -
69 50 37 15 5 2 - - -	30 30 25 23 18 8 1 - - -	31 31 31 31 29 24 22 15 9 5	30 30 30 30 21 11 8 3 2 2	31 31 31 11 5 3 1 - - -	122 122 117 95 73 49 32 18 11 7	214 209 186 145 110 64 37 20 17 7
92 75 57 28 14 9 2 -	30 30 30 28 19 - - - -	31 31 31 31 15 8 2 - - -	30 30 30 30 17 2 - - - -	31 31 31 9 2 - - - -	122 122 122 100 52 21 4 - - -	214 214 178 140 99 34 14 9 2
92 76 62 46 28 15 9 -	30 30 30 30 22 18 3 1 - -	31 31 30 27 20 6 - - - -	30 30 17 8 2 - - - -	31 31 9 2 1 - - - -	122 122 86 65 42 6 - - - -	208 192 182 137 89 64 31 16 9
78 60 51 34 15 8 - - -	30 30 30 30 29 11 1 - - -	31 31 31 12 - - - - -	30 30 29 19 5 - - - -	25 9 - - - - -	116 100 80 61 27 18 3 1 -	214 214 200 172 133 67 27 13 2 2
92 74 70 53 35 21 13 2	30 30 30 30 15 - - - -	31 31 31 31 31 19 11 5 2 2	30 30 30 30 15 2 - - - -	31 31 31 21 7 1 - - - -	122 122 122 111 82 33 12 5 2 2	214 214 214 164 148 93 37 23 14 3
92 89 69 50 18 11 8 7	30 30 30 30 24 7 - - - -	31 31 31 31 16 7 4 - - -	30 30 30 16 4 - - - -	31 31 31 17 7 - - - -	122 122 122 90 41 10 2 2 1 1	214 214 214 158 109 64 22 11 8 7
92 79 56 42 22 14 13 10	30 30 30 30 24 7 - - - -	31 31 31 25 6 - - - -	30 30 30 7 - - - -	31 31 31 1 - - - -	122 122 111 72 32 7 - - - -	214 214 203 151 88 49 22 14 13 10
86 76 61 41 21 10 4 1	30 30 29 28 22 8 1 - - -	31 31 30 28 20 12 5 2 1 -	30 30 30 16 2 - - - -	31 31 20 1 - - - -	121 117 103 80 53 24 9 3 1 -	213 208 190 156 145 66 30 14 6 2
84 78 64 43 22 10 4 1	30 30 30 29 25 11 2 1 - -	31 31 31 29 25 15 7 2 - -	30 29 25 17 8 2 1 - - -	30 27 17 6 2 - - - -	121 117 103 84 63 31 12 4 1 -	213 207 187 162 127 74 33 13 4 1
87 75 60 40 21 11 5 2	30 30 29 28 19 7 - - - -	31 31 30 27 16 9 4 2 1	29 28 25 17 9 4 1 - - -	30 26 15 6 2 - - - -	121 117 105 72 45 18 6 3 1 1	213 208 191 151 105 58 27 15 7 3

W.D. Thompson
1881

PW 2218/11
18 June 1861 Lt 1356

PW 2218/11
18 June 1861 Lt 1356

Statement

showing the approximate number of cubic yards per hour that enter Tanjore district with water at different heights on the Cauvery regulating Dam at the Head of Seringtham and the quantities that are discharged into the Coleroon river by the different surplus works in the Tanjore district.

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Height of water in the tanks of Seringtham	Quantity of Water in cubic yards per hour														Total discharge into Coleroon	Balance in Tanjore rivers	Remarks			
	In the Agumda Cauvery	Height in tanks of Seringtham and Coleroon rivers	Discharged into Coleroon by the Amicut	Height in tanks of Seringtham	Entering Cauvery river	Discharged into the Coleroon by the surplus works as below														
						Height of water in Coleroon	Difference of level between Coleroon and Seringtham tanks	150 yds Cullingulak	Height of water in Coleroon	Difference of level between Coleroon and Seringtham tanks	Grand Amicut	Height of water in Coleroon	Difference of level between Coleroon and Seringtham tanks	Cullingulak				Height of water in Coleroon	Difference of level between Coleroon and Seringtham tanks	Veddavagoody Cullingulak and Shiees
12 feet	34,640,000	6.2 1/4	15,560,000	12	19,080,000	5.3	1.9	2,118,000	6.1	2.7	5,025,000	5.3	1.9	988,500	4	538,000	24,229,500	10,410,500		
11 1/2°	27,312,000	5.1	11,172,000	11	16,140,000	4.4	1.8	1,685,000	5.5	2.8	4,556,000	4.3	1.3	1,042,000	3.2	451,000	18,906,000	8,406,000		
10 1/2°	23,528,000	4.2	10,678,000	10	12,850,000	3.3	2.5	1,241,000	4.2	4.2	2,837,000	3.5	2.9	828,500	2.6	391,500	15,976,000	7,552,000		
9 1/2°	18,428,000	3.3	8,512,000	9	9,916,000	2.2	-	691,000	3.6	-	2,113,000	2.7	-	527,000	2.1	349,000	12,192,000	6,236,000	Here full over 150 yds Cullingulak Grand Amicut and Cullingulak Amicut	
8 1/2°	13,601,000	2.4	6,064,000	8	7,537,000	1.2	-	275,000	2.5	-	1,118,000	1.9	-	289,000	1.6	248,000	7,994,000	5,607,000	Here full over Amicut	
7 1/2°	9,661,000	1.7	4,232,000	7	5,429,000	.2	-	15,400	1.8	-	671,100	1.2	-	154,500	1.1	289,000	5,362,000	4,299,000		
6 1/2°	5,021,000	.9	1,355,000	6	3,666,000	-	-	-	.8	-	251,500	.5	-	43,700	.6	17,000	1,667,200	3,353,800	When Amicut and Veddavagoody Shiees closed	
5 1/2°	2,508,000	0	*310,000	5	2,198,000	-	-	-	-	-	-	-	-	-	-	*310,000	2,198,000	Grand Amicut Shiees closed		
4 1/2°	983,000	-	-	4	983,000	-	-	-	-	-	-	-	-	-	-	-	-	983,000	Exhausted by Tamborey	
3 1/2°	426,000	-	-	3	426,000	-	-	-	-	-	-	-	-	-	-	-	-	426,000		
2 1/2°	94,000	-	-	2	94,000	-	-	-	-	-	-	-	-	-	-	-	-	94,000		
1 1/2°	4,000	-	-	1	4,000	-	-	-	-	-	-	-	-	-	-	-	-	4,000		

N.B. The Cauvery below the Vennam Head is retained by the Grand Amicut and Cullingulak and below the Lodoomoty Head by Veddavagoody Cullingulak and sluices, but the Vennam has no effect from these nor the Lodoomoty from the latter.

Camp Veddavagoody
28th April 1866

Supp. Engrs Office 6th Dec
Tanjore 25th May 1866.

M. M. M. M. M.
Executive Engineer

W. F. Water Captain R. S.
Supp. Engrs 6th Dec

I have meant showing for the 10 feet - gives the approximate quantity of water required to
 keep up 5 feet of water in the Luning dam - being 1000 for 4 and 3 months respectively. Also the
 quantity is further multiplied for storage. And also the quantity of water that must
 be stored to keep the water on the Luning dam below 8 feet and 9 feet respectively.
 N.B. concluded from paper B and C

Date	Quantity in millions (1,000,000) of cubic yards		Availability if stored over x { 8 ft. high x { 4 ft. high x { 2 ft. high	Elevation of bank required to prevent water from overflowing below	Remarks
	To bank 5 ft. in the regulating dam	For 3 months from 1st of to 30th of			
1856	1.418	321	1.167 ^x	677.	0
1857	2.030	690	1.768 ^x	364	0
1858	762	762	1 ^x	4233 ^x	1997
1859	359	222	2.792 ^o	2792	1640
1860	1.462	408	.794 ^x	476	0
1861	1.482	903	1.855 ^o	1.855	416
1862	.278	131	1.188 ^x	248	0
1863	1.074	427	1.529 ^o	1529	677
1864	1.109	222	3.157 ^o	3157	1794
1865	1.216	571	3.304 ^o	3304	1692

Lamb & Duckworth coaly
28th April 1866
Wm Lloyd Garrison
25th May 1866
Wm Lloyd Garrison
19.7.66
MD James Lubbock

Civil Works

Public Works Department.

1867
No 1894

PROCEEDINGS of the MADRAS GOVERNMENT.

Under date the 16th June 1866.
Read the following

From the Supy Engineer of the 6th Div.

(Here enter No. 133 dated 25th May) 1866.

The question raised by
Colonel Trenchard of
the effect which the de-
struction of the tract
of forests in Coorg and
other parts of the upper
catchment basin of
the river Cauvery has
had in augmenting the
magnitude of the floods
in that river, and in
proportionately shortening
the time of their duration,
having been brought
under

WOL

Enclosure D
16th June 66

27/2/1866
16th June 1866

under the notice of this
Government by the
Government of India,
the Superintending En-
gineer of the Vth Divⁿ
was called upon to report
upon the matter from the
information obtainable
from the records of his
Office.

Captain Walker
now submits a full report
on the subject, with plans
to show the height to
which the freshes at
Mairat during the twenty
years from 1846 to 1865,
inclined, and the length
of time which each
fresh continued at a
given

given level. From an
analysis of these it ap-
pears that for the last
ten years of the period
the floods have been hea-
vier than during the
first ten years; and so
far Colonel Rawford's
theory would appear to
be borne out, but as
these heavy floods
chiefly occurred during
the North East monsoon,
which does not extend
into the Districts in
which the clearance of
forests has been going
on, and as their duration
was also greater during
the latter than during
the former years, the
Supy

Superintending Engineer
seems to be right in at-
tributing these greater
floods in the river sim-
ply to an accidental
increase in the amount
of rainfall.

The Government are
not prepared to say that
Colonel Langford's suspi-
cion is without foundation,
and they have no doubt
that locally the effect
of the destruction of the
jungles is perceptible,
but there is nothing
before them to show
that the clearances in
the upper basin of
the Cauvery have been
sufficiently extensive
to

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to influence the river
so far from the localities
in which they were made
as Tanjore. To bear out
this view the Govern-
ment have only further
to remark that the hea-
viest floods ever known
to have happened in
Tanjore occurred early in
the century, long before
coffee planting and its
accompanying clearances
were introduced, and that
no flood of such
height as to cause serious
damage has occurred
since 1858, which would
scarcely have been the
case if clearing away
the jungles had the
effect.

effect which Colonel
Dunford imagines.

The Government
are much pleased with
the completeness of the
returns submitted. The
wet cultivation in the
Tanjore District com-
mences with early freshes
in June, and by the
end of August the whole
of the wet lands in
the Delta are under crop,
and it is therefore of
paramount importance
that there should be
no failure in the supply
of water at that season,
but during the month
of Sept. and the early
part of October, the break

between the two monsoons
occurs, when the rains of
the South West Monsoon
have ceased to fall and
those of the North East
Monsoon have not com-
menced, and it conse-
quently happens that,
in unfavorable years,
the crops suffer much
from drought. The Super-
intending Engineer shows that, with
the single exception of
the year 1858, in which
the South West monsoon
failed, there has always
been a sufficient quan-
tity of water passing
down the river during the
month of July and August
to have admitted of

8000 millions of cubic
yards being stored not
only without robbing the
cultivation of its supply,
but also, ~~with the exception of~~ relieving the river
of a part of its surplus
water at times when the
floods were so high
as to endanger the
banks, and, further,
that this quantity of
water would have been
sufficient to have
maintained an average
depth of water over the
Cavery dam for four
months in the year 1859
and 1862, and for 5
months in 56, 57, 60, 63,
64 and 1865. These
are most valuable data

and

35
and will be of much
use to the Government
when the question of
storing water in the upper
valleys of the Cavery is
under consideration.

The Superintending
Engineer states that at
though 5 feet of water over
the Cavery dam ought
to afford a full and
sufficient supply for
the irrigation dependent
on the Cavery, yet owing
to the defective state
of the river bed, the
Talukgs. do not
receive a sufficient sup-
ply until there is 7 feet
passing over the dam.

4358.35

These orders are well
known to the State Gov. of this
I am containing my application
called for statistics to the
caused by the increase
in the population of India
in the Rivers Beavry and
Coleridge and Lumbally
disappearing leaving the
right to which they
have attained during the
twenty years from 1836 to
1856 inclusive

E. 9 June 1866 n. 46