M.R.O. 1—77,006—8-6-37.

(1) Number of pages 20.

(2) Date of repair 23-5-62

(3) Initials of the Referencer

MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No.	333-B	Press / Mis.-
660-661.		
Dated	28 — 2 —	1862.

Not to be folded or roughly handled

1 E

Proceedings of the Madras Government, Public Works Department, 28th February 1862.

No. 460. Read the following Endorsement of the Acting Deputy Chief Engineer, Central Circle, dated Chepauk, 27th January 1862, No. 9,876.

Read the following letter from Captain J. F. FISHER, District Engineer of Bellary, to the Deputy Chief Engineer, Central Circle, dated Bellary, 13th December 1861, No. 360:—

SIR,

1. I have the honor to forward the Registers of water supply in the Tungabaddra river for two days in May and for the months of June, July, August, September, October and November of this year, together with a statement exhibiting the discharge of water by the river in cubic yards per hour for every foot on the Register Pillar.

2. From these records it appears the first rise in the river took place on the 31st May, the river then fell gradually till the 3rd June, and on the 4th and 5th it was below the foot of the pillar and there are no records for those days: on the 6th it rose rapidly, and the freshes continued from this time during the rest of the month sufficiently high to have enabled cultivation to have been commenced over any area of land in this District to which it would be profitable to convey the water.

3. In July the greatest height attained by the river was 16′-6″ on the 17th, and the least 6′-2″ on the 13th.

4. In August the greatest height attained was 20′-3″ on the 17th, and the least 5 feet on the 5th.

5. In September the greatest height attained was on the 3rd when the river stood at 18 feet, and the least was on the 30th when it fell to 3′-9″.

6. In October the greatest height attained by the river was on the 4th when it stood 4′-9,″ and the least was on the 31st when it had fallen to 2′-2″.

7. In November the greatest height attained was on the 17th when it stood at 3′-10,″ and the least was on the 30th when it had fallen to 1′-6″.

8. In this year the south-west monsoon was very late, and in fact may be said not to have set in in any strength till July, no heavy freshes occurred during the prevalance of this monsoon; the north-east may be said to have failed entirely.

9. These records, I beg to say, have been kept under Captain Babington's supervision, and I consider them quite trustworthy; a reference to the statement of the discharge of water by the river sent with them will show at a glance the quantity passing down at any date, and it now appears that this river can be fully relied on to supply more than one million cubic yards of water per hour during the monsoon seasons.

Submitted to Government for information with reference to paragraph 9 of their Proceedings No. 602, dated 25th March 1861. It will be observed that the Register of the height of water in the Tungabaddra extends over from end of May to end of November, and that the greatest height registered is 20′-3″ at which height the discharge is more than 24 million cubic yards per hour; while at only one foot height the discharge is less than ¾ of a million cubic yards per hour, and more than ½ a million, so that more than one million cubic yards per hour throughout the monsoon season or from 1st June to 30th November may be relied on.

1 Letter from the District Engineer, Bellary, No. 360, dated 13th December 1861, with two enclosure.

(Signed) J. CARPENDALE, Lieut.-Colonel,
Acting Deputy Chief Engineer, Central Circle.

No. 461. ORDER THEREON, 28th February 1862, No. 333B.

Ordered to be recorded.

(Signed) W. H. HORSLEY, Lieut.-Colonel,
Secretary to Government.

May 30th	400,000	pinks	
" 31st	1,320,000		
June 1.2.3.4.5	340,000	falls gradually from 1200 to 100.000	
6th	4.500,000	rises decidedly to 5 millions	
7.8	3.200,000	falling to 2 millions	
9.10.11	1,800,000	Steady	
12.13	1,220,000	falling to 900,000	
14.15th	860,000	Steady	
16	1,100,000	slight rise:	
17.18.19	870,000	falling to 600,000	
20.21.22	525,000	Steady lowest state 3 rivers during season	
23.24	860,000	Steady	
25.26.27.28.29	1,400,000	up & down between 1 & 1¾ millions	
30	4,500,000	rising rapidly from 1 to 9 mills	
July 1st	12,250,000	do do 9 to 15½ "	
2nd	12,500,000	falling 15½ to 9	
3rd	7,500,000	do slowly 9 to 7	
4	6,850,000	do do 7 " 6½	
5	6,500,000	6½	
July 6	7,480,000	rising	6½ to 8½
" 7	9,000,000	Steady	8½ to 9¾
" 8.9.	8,800,000		8 — 9
" 10.11.12.13.	6,880,000	falling	8 — 5
" 14.15	8,000,000	rising	5 — 15
" 16 — 27" incl. twelve days	16,000,000	high freshes twelve days	14½ — 18½
28.29	11,400,000	fall. rapidly	14½ — 8½
30.31st & Augt 1st	6,550,000	do slowly	8½ — 5
Augt 2.3.4	4,600,000	do do	5 — 4
5th	4,000,000	Steady at 4 millions	
6-7	7,200,000	rising	4 — 11½
8.9	9,000,000	unsteady	7½ — 12½
10 to 15th incl.	11,400,000	do	8 — 14½
16 to 25 incl. three days	20,800,000	high freshes three days	15 — 24
26th	12,780,000	falling	11½ — 15½
25 to 31st incl. five days	11,200,000	Steady four days	9½ — 11.85

Sept			
1st —	16,440,000	— rising —	11¾ to 18½
2. 3 —	20,380,000	- high freshes —	21¾ — 19
4 to 8 incl. 5 days —	14,500,000	- falling slowly -	19 — 10
9 to 14 " 6 days —	7,000,000	— do — steadily -	10 — 5
15 - 18 four days —	4,580,000	— do — do —	5 — 4
19 to 29 —	3,300,000	— do —	4 — 3
30 Sept. & 1 to 4 Oct. incl	3,150,000	four days slights above below 3 mill.	— 3½ — 2½
5 to 10 incl	2,415,000	falling —	3¼ — 2¾
11 - 17 —	1,820,000	all below 2 mill. seven days —	2 — 1⅔
18 - 24 incl	2,330,000	seven days above 2	— 2 — 2½
25 to 31st incl	1,650,000	Eight days below 2 falling —	— 2 — 1¼
Nov. 2 to 12 inclusive	1,155,000	Eleven days river falling & between	— 1¼ & 1 mill.
13 to 15 incl	1,590,000	- slight rise —	— 1½ — 2 —
16 - 18 —	2,490,000	— do —	— 2 — 2¾
19 - 20 -	1,700,000	- falling At the	— 2 — 1½
21 - 25	1,156,000	End of the season	— 1½ — 1
26 - 30 —	900,000		1 mill. to 850000

Abstract —

Millions of Cubic yards per hour

	0 to ½	½ to ¾	¾ to 1	1 to 1½	1½ to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 9	9 to 15	15 to 25
June	55	3	7	6	5	1	1	1	0	1	0	0
July	—	0	0	—	—	—	—	0	2	11	6	12
August	—	0	0	—	—	—	—	4	2	3	12	10
Sept	—	0	0	—	—	1	11	4	2	3	6	3
Oct	—	0	0	1	12	15	3	0	0	—	—	—
Nov	—	—	5	17	5	3	0	—	—	—	—	—
Total days of each hours quantity	5	3	12	24	22	20	15	9	6	17	24	25

Number of days in each month

Statement shewing the discharge of water in the Songadindebra river at the Bellary District for every foot in the register pillar at Hunsasagar, from 1st to 22d Sept.

Register or Pillar	Fall per mile	Hydraulic Mean Depth	Velocity	Sectional area Square yards	Discharge in Cubic yards per hour	Remarks.
1		2¼	2674	2014	603.504	Lowest velocity 1½ miles per hour
2		3¾	3492	349	1211.728 — 670	Highest do 4¼ do do
3		5	4019	498	2,001,462 — 790	Mean do 3 do do
4		6¼	4500	549	2,920,500 — 920	
5		7½	4932	800	3,945,600 — 1025	
6		8½	5255	955	5,008,015 — 1063	
7		9½	5589	1107	6,153,813 — 1145	
8		10½	5849	1262	7,378,914 — 1225	
9		11	5987	1419	8,495,553 — 1120	
10		12	6256	1576	9,854,456	
11		13	6531	1732	11,336,490	
12	16	13½	6534	1893	12,381,930	
13		14¼	7068	2056	14,531,808	
14		15	7068	2217	15,669,756	
15		15¾	7068	2379	16,814,772 — 1145	
16		16	7068	2540	17,952,720 — 1140	
17		17	7068	2701	19,090,668	
18		18	7069	2863	21,670,047	
19		19	7069	3021	22,885,056	
20		20	7069	3185	24,107,265	
21		21	8028	3314	26,859,672	
22		22	8028	3508	29,151,700	
23		23	8481	3670	31,128,270	
24		24	8481	3831	32,490,711	

District Engineer's Office
Bellary 15th December
1861.

Wm. F. Ulrich Captain
District Engineer of Bellary.

Height of Water in the Rivers Toombooderia at Opposite Pillar near Bumpassagar Ferry

	At the Register Pillar						
	At 6 A.M.		At 12		At 6 P.M.		
1861.							
May	30½	"	9	"	3	"	1
	31½	2	10	2	"	1	9
June	1½	1	11	1	3	1	3
	2½	"	9	"	6	"	5
	3½	"	3	"	1	"	"
	4½	1	8	6	"	6	"
	5½	5	3	4	11	1	6
	6½	4	"	3	9	3	6
	9½	3	.	2	11	2	9
	10½	2	9	2	5	2	5
	11½	2	5	2	5	2	8
	12½	2	3	2	2	2	1
	13½	2	"	1	10	1	9
	14½	1	8	1	6	1	6
	15½	1	5	1	6	1	6
	16½	1	9	1	10	1	10
	17½	1	9	1	8	1	8
	18½	1	8	1	8	1	6
	19½	1	3	1	1	1	1
	20½	1	"	1	"	"	11
	21½	"	10	"	11	"	9
	22½	"	10	1	"	1	1
	23½	1	8	1	6	1	6
	24½	1	6	1	6	1	6
	25½	1	7	1	11	2	1
	26½	2	6	2	1	2	7
	27½	2	9	2	8	2	6
	28½	2	3	2	2	2	1
	29½	2	"	2	"	1	10
	30½	1	10	6	3	7	9
July	1½	11	"	13	6	11	"
	2½	13	6	13	"	10	"
	3½	8	6	8	2	8	"
	4½	7	9	7	7	7	5
	5½	7	4	7	3	7	3

1400,
4½ 5½ Water below the Zero of the register pillar
1320
700
450
350 100
4,450
3,800
2660
1900
1800
1720
1320
1125
840
1040
940
820
570
500
570
860
1125
1600
1360
1340
1040
4480
14,150
12,900
7,600
5,250
6,400 = 6 Mill[n] 400,000

Heights supplied on the 7th

Cuttack Flood 1861

Cuttack 12th Aug[t] 1861

Communicated to Lieut Pontifex Offg Engr & Bellary with D[o] No 1500 dated 13th Aug[t] 1861

At the Register Bridge

		At 6 A.M.		At 12		At 6 P.M.		
September	20th	4	9	4	8	4	7	3600
1.6	21st	4	7	4	6	4	5	3450
1.4	22nd	4	1	4	1	4	3	3050
1.3	23rd	4	3	4	2	4	2	3150
1.2	24th	4	2	4	3	4	3	3100
1.2	25th	4	3	4	2	4	.	
1.4	26th	4	4	4	6	4	3	3260
1.4	27th	4	4	4	4	4	3	
1.2	28th	4	2	4	2	4	3	3100
	29th	4	4	4	3	4	2	3160
1.10	30th	4	11	3	10	3	9	2810 3300
October 1.8	1st	3	8	3	8	3	9	2600
	2nd	4	7	4	6	4	5	3430
	3rd	4	5	4	6	4	7	
3 mile 1.6	4th	4	5	4	4	4	9	3450 3150
	5th	4	1	3	11	3	10	2840
	6th	3	9	3	8	3	7	2500
1.6	7th	3	7	3	6	3	6	2450
	8th	3	6	3	5	3	4	2380
	9th	3	3	3	2	3	2	2150
	10th	3	1	3	1	3	.	2070
	11th	3	1	3	.	2	11	2000 2495
2.10	12th	2	10	2	10	2	9	1870
2.8	13th	2	9	2	8	2	7	1790
2.9	14th	2	9	2	9	2	8	1800
1 3/4 M.	15th	2	8	2	8	2	7	1738
	16th	2	7	2	7	2	8	
2.10	17th	2	9	2	9	3	.	1900 1833
3.6	18th	3	3	3	1	3	9	2450
3.4	19th	3	4	3	4	3	3	2300
3.5	20th	3	5	3	4	3	5	2300
	21st	3	6	3	5	3	4	2375
	22nd	3	3	3	2	3	2	2150
2 1/2	23rd	4	.	3	6	3	4	2520
	24th	3	4	3	2	3	2	2200

At the Register Bridge

		At 6 A.M.		At 12		At 6 P.M.		
October	25th	3	-	3	-	2	10	1950
	26th	2	8	2	7	2	6	
	27th	2	7	2	8	2	9	1740
	28th	2	9	2	9	2	8	
	29th	2	8	2	8	2	7	
2.5	30th	2	6	2	5	2	4	1580
2.1	31st	2	3	2	3	2	2	1610
November	1st	2	2	2	2	2	1	1540 1650
2.1	2nd	2	1	2	1	2	.	1570
	3rd	2	-	2	-	2	-	1410
	4th	2	-	2	-	2	-	
	5th	2	-	1	11	1	11	1155
	6th	1	11	1	11	1	11	
	7th	1	10	1	10	1	10	
1 mile	8th	1	10	1	10	1	10	1050
	9th	1	10	1	10	1	10	
	10th	1	10	1	10	1	10	
	11th	1	11	1	11	1	11	1155
	12th	2	-	2	-	2	-	1210 1155
	13th	2	2	2	2	2	2	1540
	14th	2	4	2	6	2	6	1560
	15th	2	9	2	10	2	11	1870 1590
	16th	3	3	3	6	3	8	2150
	17th	3	10	3	10	3	9	2720
2 mile	18th	3	5	3	4	3	2	2500 2490
	19th	2	11	2	9	2	8	1800
	20th	2	6	2	6	2	5	1600 1700
	21st	2	3	2	2	2	1	1340
	22nd	2	-	2	-	2	-	1910
	23rd	1	11	1	11	1	10	1150
	24th	1	9	1	9	1	9	1000
1 mile	25th	1	9	1	9	1	8	1156
	26th	1	8	1	8	1	7	
	27th	1	7	1	7	1	7	925
	28th	1	7	1	7	1	7	
	29th	1	6	1	6	1	6	870
	30th	1	6	1	6	1	6	

A true copy

Wm. L. Fiehm 900

Captain

Dist. Engineer of Bellary

No 360. District Engineers Office
Bellary 13th December 1861.

From Lieut Colonel J. F. Fisher
Officiating District Engineer of Bellary
To The Deputy Chief Engineer
Cuddapah Circle.

Sir,

I have the honor to forward the Registers of water supply in the Tungabudra River for 2 days in each month for the months of June, July, August, September, October and November of this year, together with a statement exhibiting the discharge of water by the River in Cubic yards per hour for every foot on the Register pillar.

2. From these records it appears that first rise in the river took place on the 31st May the river fell gradually till the 3rd June and on the 4th and 5th it rose below the foot of the pillar and there are no records for those days, on the 6th it rose rapidly and the freshes continued from this time during the rest of the month sufficiently high to have enabled cultivation to have been commenced over any area of land in this District to which it would be profitable to convey the water.

3. In July the greatest height attained by

Endorsement No.
From a letter from the Dy Chief Engr Cuddapah
No 360 Dated 13th Decr 1861.
Recd 24th Dec 1861.

by the river was 16' 6" on the 17th; and the least 6' 2" on the 13th.

4 In August the greatest height attained was 20' 3" on the 17th, and the least 5 feet on the 5th.

5. In September the greatest height attained was on the 3rd when the river stood at 18 feet, and the least was on the 28th when it fell 3' 9".

6 In October the greatest height attained by the river was on the 4th when it stood at 4' 9", and the least was on the 31st when it had fallen to 2' 2"

7. In November the greatest height attained was on the 17th when it stood at 3' 10" and the least was on the 30th when it had fallen to 1' 6"

8 In this year the S.W. monsoon was very late and in fact may be said not to have set in any strength till July and heavy freshes occurred during the prevalance of this monsoon the N.E. may be said to have failed entirely.

9 These records they say have been kept under Captain Babington's supervision, and I consider them quite trustworthy.

2

In reference to the Statement of the discharge of water by the River sent with them will shew at a glance the quantity passing down at any date and it now appears that this River can fully relied on to supply more than one million cubic yards of water per hour during the monsoon seasons.

I have the honor to be
Sir,
Your most Obedient Servant

Mos. F. Fitchett Captain
& District Engineer of Bellary

No 9896.

Submitted to Government for information with reference to para 9 of their Proceedings No 600 dated 3rd March 1862 and to state that the Register of the height of water in the Toongabundehra extends over from end of October to end of November and that the greatest height registered is 20' 3" at which height the discharge is more than 24 Million Cubic Yards per hour; while at only one foot height the Discharge is less than ½ of a Million Cubic Yards per hour, and more than ½ a Million, so that more than one Million Cubic Yards per hour throughout the Monsoon season or from 1st June to 30th November may be relied on.

Deputy Chief Engrs Office
Central Circle
Chepauk
27th January 1862.

J Gabbundah Lieut Col
Actng Dy Chief Engr C.C.

To
Lieutenant Colonel W. A. Horsley
Chief Engineer & Secretary
to Government P.W.D.

1861 D. Dept.

From
Lt Col Patrick Cogniein
Chief Engineer
Southern Division
Bellary

To
The Deputy Chief Engineer
Central Circle

Dated 13th December 1861

No 3560.

Sir,

I have the honor to request that the Resolution of Government in the Public Works Department dated 3rd instant No 600 may be extended to 2 months instead of 1 month as at present for the benefit of Lieut Colonel Gabbundah, Executive Engineer Cuddapah Division, who is desirous of taking leave to Europe on Private affairs.

I am Sir
Your most obedient Servant
P. Cogniein Lt Col
Chief Engineer

Approved
Lieut Colonel Horsley
Secretary
to Government
P.W.D.

Rec'd 25 Jan 62

395

Public Works 1862 Dep.
Proc: of Govt for Feby
No. 214.

From

Lieut Col. J. Campbell
Actg Dy Chief Engr Ord

To

Lieutenant Col. W.R. Rowan
Chief Engr & Secretary
to Government Bombay

Dated 24th January 1862
Rec'd 28th Do

2 Enclosures,
No. B No 98 &c

With reference to para 9
of the Proceedings of Government
No 602 dated 25th March 1861
submits letter from the Assist
Engineer Pellany with
enclosures regarding the water
available in the Tonga Indoha
Tank.

Recorded

No 460 & 461

Rec'd Feby 28th