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MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. 1534	Press
226-228	Mis.
Dated 20. 6. 1877.	

Not to be folded or roughly handled

17

*Proceedings of the Madras Government, Public Works Department,
20th April 1870.*

No. 226. Read the following letter from Captain R. F. OAKES, R. E., Superintending Engineer, 6th Division, to the Secretary to Government, Public Works Department, dated Tanjore, 3rd March 1870, No. 1,370 —

I HAVE the honour to inform you that for years there have been complaints regarding the defective supply to the Nunja Voikal Channel which branches from the south bank of the Agunda Cauvery, at about a mile west of the Wyacondan Channel-head, and irrigates

Three plans and sections
One abstract estimate
„ memorandum
„ extract from letter, No. 214, of 10th August 1869, from the Collector of Trichinopoly

1,850 acres, which yield a revenue of Rupees 9,343-11-0. Some twelve or fourteen years ago the head of the channel was extended about $2\frac{1}{2}$ miles above the head indicated in plan No. 1. This channel, however, is said never to have been made use of, and this is probably the case, as it is carried up to a point where the river is shoaled, the deep set being on the north bank of the river.

2 From the section of the channel it will be observed that a fall of 2 64 feet can be given to its head. It is clear, therefore, that no extension of the head is necessary, and the causes of the difficulty of obtaining a supply have been owing to the injury to which the head of the channel has been liable—first, owing to the head of the channel from A to B running through the Agunda Cauvery Paduguay, and being subject to immersion during high floods, and then the head is much silted up—the Caroor road here forms the river bank, second, owing to the extreme tortuousness of the channel through the Paduguay; and third, to the fact of the channel having no head-sludge, so that high floods cannot be excluded. The bridge at B consists of an old massive work which does not afford facilities for closing it, and, moreover, the waterway of this bridge cannot be reduced, as it affords facilities for the escape of surplus water from the Katoovar or jungle stream, which receives the drainage of a large tract of country, and which, passing into the Nunja Voikal a little below the point B, discharges a portion of its flood waters into the Wyacondan over the surplus calingulah at C.

3. To remedy the above defects it is proposed to construct a new head-sludge at A and to provide a surplus calingulah immediately above it to prevent the head from being silted; to straighten the channel or to excavate it anew, as shown in yellow, to form the river embankment on the northern bank of the channel; and to alter the existing surplus calingulah at C.

4 The cost of these works amounts to Rupees 12,500 in all. The cost of excavating the channel with the proposed section would be only Rupees 1,600, but the earth obtained from the channel is only sufficient for one-fifth of the embankment, and as, independently of the protection afforded to the channel by the embankment, the latter would not be required, for the Caroor road now forms the river embankment at this locality, it is necessary to debit the cost of the embankment, viz., Rupees 7,200, to this work. Of this amount the villagers have consented to pay one-third, or Rupees 2,400; this in itself is no slight indication of the necessity for the improvements proposed, and it is further stated that if the proposed works are carried out, 48 acres of waste land will be brought under cultivation and a second

			RS	
Earth-work, etc	...	..	7,200	
Masonry works		..	5,300	
Total			12,500	

*Proceedings of the Madras Government, Public Works Department,
20th April 1870*

crop will be raised on 375 acres, affording an increase of Rupees 921 of revenue, or nine per cent on the proposed outlay on the part of Government

5 By providing a head-slucce for the Nunja Voikal Channel at A, by which flood-waters may be excluded or the whole supply of the channel cut off during the fall of heavy rain, a great portion of the drainage brought down by the Katoovari or jungle stream adverted to above may be carried off by the Nunja Voikal, instead of breaching that channel as it too often now does

6. The new surplus calingulah near the head will, it is anticipated, keep the head of the channel clear, while the calingulah-at C, which is to be altered so as to afford protection to the river-bank, etc, will tend to keep the bed clear between the head sluice and its own position

7 Under the new settlement which was introduced in 1864, remissions are granted only in very extreme cases, but, from a statement furnished by the Collector, it would appear that in the four

1865 to 1868 Fushies, 1275 to 1278, crops on which the assessment is Rupees 2,186 have failed, or the land has not been cultivated, and remissions have been granted only to the amount of Rupees 331-12 0 In addition to this it would appear that remissions to the amount of Rupees 9,663-10 9 were granted between 1854 and 1864 under various heads, such as waste, non-cultivation of a second crop, etc; but the Collector is of opinion that these remissions or deductions, as he terms them, are really no indications of a defective supply

8. The Merassidars, it appears, have to clear the head of the channel of silt three or four times during the season, and the value of the labour employed is estimated at between Rupees 3 and 400 annually

9. The Collector has countersigned the estimate in token of his approval of the proposed improvements

10. This work was entered in the Budget list submitted from this office but does not appear in the Budget of 1870-71. If an allotment of Rupees 5,000 were made from the reserve in 1870-71, the work might be completed next season or in 1871, but, if no funds are allotted till 1871-72, the work will not be completed till 1872, for it is not possible to execute such a work in one season if no preparations are made for it till the 1st April

No 79.

NOTE by the Acting Chief Engineer for Irrigation

I HAVE ascertained from the Superintending Engineer that there are objections to placing the head-slucce of the Nunja Voikal at the Caroor and Trichinopoly road and then making a new channel to the south of the road to the point B, where the present channel now crosses Captain Oakes says that were this done about 2,500 rupees would have to be expended in raising the road; that there would be some difficulty in keeping the bridge at B available for surplus water, and at the same time in excluding flood-waters when the Cauvery is in fresh, and that this arrangement would be likely to meet with opposition from the occupiers of the lands near the road, as also from the Nungaveram Merassidar, who owns it Probably,

No 227.

*Proceedings of the Madras Government, Public Works Department,
20th April 1870.*

therefore, after paying compensation for valuable lands taken up, the saving which might be effected by making the road the river embankment would not be sufficient to make it desirable to adopt an arrangement which would not be as acceptable to the ryots as that proposed by Captain Oakes

(Signed) J MULLINS, Major, R E,
Acting Chief Engineer for Irrigation
FORT ST. GEORGE,
28th March 1870.

No. 228 ORDER THEREON, 20th April 1870, No 1,034.

IRRIGATION, No 13

THE Government sanction the estimate, Rupees 12,500, submitted by the Superintending Engineer, 6th Division, for the improvement of the Nunja Voikal, one of the irrigation channels supplied by the Agunda Cauvery in the Trichinopoly District

2. It is observed that, of the total estimated cost as stated above, Rupees 2,400 will be contributed by the villagers interested, who will benefit considerably by having much less work to do in clearing the upper part of the channel after heavy freshes in the river. It is estimated also that Rupees 921 will be the increase of revenue from the extension of second-crop cultivation, rendered practicable by the improvement of the supply.

3 Rupees 5,000 will be allotted from the reserve under "Agricultural" for 1870-71 as requested by Captain Oakes

(True Extract)

(Signed) J MULLINS, Major, R.E,
Acting Joint Secretary to Government.

To the Superintending Engineer, 6th Division
" Controllor of Public Works Accounts
" Revenue Department
" Chief Engineer for Irrigation

Govt. of 18703 30,000.
PUBLIC WORKS.

To

THE SUPERINTENDING ENGINEER

Trichinopoly, 20th April 1866.

Recd.

Encl.



20th April 1866, No. 1,034

APRIL

Nos. 220-223

Nanja Vokkal -- Estimate of Rupees
10,560 for the improvement of the Nanja
Vokkal, one of the irrigation channels
supplied by the Agunda Cauvery in the
Trichinopoly District sanctioned with
remarks

No. 214

Trichinopoly Collector's Office
10th August 1869

From,

The Collector of

Trichinopoly

To

The Superintending Engineer
6th Division

Sir,

3. The other statement marked B, shows
that during the 10 fustars prior to 1274 a sum
of Rupees 9663-10-7 has been deducted from the
Ryots patta, not as remissions for share
tea, but on account of waste remitted under
the old rules, Boganasti or non-cultivation
of 2^d crop on two crop lands, and "Paur
Cummi" or cultivation of an inferior and
more lowly assessed crop. These old fashioned
remissions long since swept away are
therefore ^{more} imaginary than real, as it was
in those days entirely at the option of the
ryots to cultivate or not as they choose.

4. Since the introduction of the rule
to charge for all waste not formally relin-
quished, that is since 1860, when the
cultivation of waste included in the patta
became obligatory on the part of the ryots,
there

1864

There has been a decrease in the extent of waste
The failure of 2nd Crop would appear from the
statement to have continued till July 12th,
since which the statement shows much
improvement under that head also
5. I however learn that there is some
defect at the head of the channel where it
branches from the river, and that the Villagers
are in consequence obliged to clear the settings
throughout the channel some 3 or 4 times before
the harvest, and thus the state of the channel
must be ascertained from personal inspection.

I have the honor to be
Sir

Your Obedt Servant
/signed/ Geo Banbury
Collector

/True Extract/

M. F. Baker Captain R.E.
Supt Engineer 6th Division

of me and dependent on the
of me and dependent on the

Memo on Road Ruur and
Channel for Menga Toikal

Owing to the fact that any excess of water which the Kinga Vorkal may receive cannot be wasted but must fall into the Myacondan channel and this channel except in extreme floods does not carry water to its eastern extremity, the head Sluice for the Kinga Vorkal and the Section given to the Channel have been calculated to provide for more liberally than for the wants of the land dependent on the Kinga Vorkal itself, they provide for the Kinga Vorkal receiving 44 Cft per 1" with 18" of water in the Cavern with a backwater below the Sluice of $1\frac{1}{2}$ ' of water so that by means of a Coroombo a full theoretical supply may be thrown down the Channel throughout the year, owing to the sandy nature of the soil through which the Channel will pass and to the fact that considerable erosion of the sides may take place it has been deemed prudent to allow a large margin above the theoretical supply even when water is low. A second crop is now raised on 387 Acres and will hereafter be raised on 1262 Acres

Adro

Good with A. b.

Letter from the Virginians
Division No 1370.
Jacks S. D. March 1870.

20 The Sunday before
Sept. 8.

225-
22470

Extract from a letter
from the Collector of duties.
- York, Nov 21/4 Sent 10 Augt
1869. -

Yours most obed^t servant

20
Ropes of 2 to 1 have been provided for the
channel's sides but if the soil proves to be
very sandy a greater slope will be given to the
channel's sides, this will not add to the
cost of the work in any way as the bank
requires more earth than will be taken from the
channel.

In altering the surplus Calingula Pit
it is not proposed to lengthen the wings to protect
the bank but the foundations of the old work
should be shaken but the bank will be
protected by a rough stone revetment in
extension of the wings for the same reason
the criticism of the wings is not increased
but as the work has stood for a long period
without any settlement it is expected that
the limited section to which the wings are
confined owing to the section of the old work
will prove to be sufficient.

Supg Engr office 6D

Tanjore 3rd March 1873

W. P. A. T. Captain P. C.
Supg Engineer 6 Division

Plans on Head Sluice
and channel for
Kunga Vokkal.

Enclosure No 5 in a
letter from the Superintending
Engineer No 1370 dated
3rd March 1870
The Secretary to Govt
of Madras
1870
1870/1870

Trichuropoly District
Abstract Est No 119
Improving the Kunga Vokkal and Raising
every Bank for the better Supply of Kungapuram
Sec. of Channel 12' at bottom side Slopes 2 to 1.

whly Description of Work Rate Amount Total

1/4 Cys of Earthwork ————— do. 13592528

do of do ————— do. 1 " 2915.

Cys of Rough stone pavement ————— do. 28 " 9064.

do of Jelly ————— do. 14 " 11346

Jungle clearing ————— 100.

Sundries & Contingencies ————— 125510

————— 7200 " —

Masonry Works

Constructing a Head Sluice at the
Kunga Vokkal Head 2 Van to each
4 1/2 feet span.

Cft of Brick m Chumam ————— at. 2319346.

Cft of Cut Stone in Chumam ————— at 1 " 22412 "

Cft of Teak wood wrought & put up at 14 " 90 " "

Suplft of Plastering ————— at 2 " 6055.

Cft of Brick m Chumam for Curved Whig
between Head Sluice & Suplus Weir — at " 233229 "

Suplft of Plastering ————— 2 " 10137

C.O. 2301267200 " —

Quantity

Description of Work

B.O.

Rate

Amount

Total

Quantity

Description of Work

Rate

Amount

Total

13.9

Paving

Excavating foundation & forming temporary dam

Scaffolding

Sundries & Contingencies

Constructing Surplus Calingula adjoining the New Head Stairs 36 feet gauge

10101 Cft of Brick in Chumam at

94 1/2 Cft of Concrete below Steps on Esplanade

3228 1/2 Supt of Plastering at

49 1/2 Cft of Cut Stone in Chumam at

18 Cft of Teakwood wrought flat up at

Baling Water

Excavating foundation & forming temporary dam

Scaffolding

Sundries & Contingencies

B.O.

2361 12 6 7200 "

300 "

200 "

35 "

1433 6

2980 "

23 1/2 207 3

2 11 13

64 9

49 8

72

150 "

100 "

20 "

101 109

1490 "

Improving the present Surplus Calingula

126 1/2 Cft of Brick in Chumam at 20 178 3

1202 1/2 Supt of Plastering at 2 24 10

22 1/2 Cft of Stone beams at 1 22 8

15 Cft of Teakwood wrought flat up at 4 60 "

Tying behind Wings 5 8

Scaffolding 10 "

Sundries & Contingencies 29 12 2

330 "

Total Estimate Rupees 12500 "

Signed / J Parthasarathy Sengupta
Superintendent of N.H. Range.

Sup. of Census Office
to Genl.

26 October 1869

W. B. Sengupta
Ct

W. F. Drake Capt R.C.
Sup. of Engrs. to Genl.

15D

N^o 1370

From,

Captain P. F. Cakes R.E.

Supy Engineer, 6th Division

20

Colonel. A Orr R-C

Secretary to Government. PWD.

Sr

I have the honor to inform you that for years there have been complaints regarding the defective supply to the Munga Vokai channel which branches from the South bank of the Agenda Canyon at about a mile west of the

Myacandan channel head and irrigates 1850
acres, which yields a Revenue of Rupees 9343-11-
Some 12 or 14 years ago the head of the channel
was extended, about $2\frac{1}{2}$ miles, above the head
indicated in plan No. 1, this channel,
however, is said never to have been made
use of and this is probably the case, as it is
carried up to a point where the River is choked,
the deep set being on the North Bank of the River.

2. — From the section of the channel,
it will be observed that a fall of 2.64 ft.
can be given to its head, it is clear therefore
that

6000

There is no need
of a great deal of

$$x' = (x_1, \dots, x_n) \in \mathbb{R}^n$$

1. *Chlorophyll* *a* and *b* are the two main types of chlorophyll found in plants.

One letter of 14 June 1870
from the Johns Hopkins
of 1370 and 3rd March 1870
to the Secretary of the
of the Secretary of the

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emphasizing the change
of that with respect to
every word and the
degree of change of
the word.

Feb 10 1850

that no extension of the head is necessary
and the causes of the difficulty of obtaining
a supply have been owing to the injury to which
the head of the channel has been liable
1st Being to the head of the channel from A
to B running through the Agunda Cavery Padugay
and being subject to immersion during high floods
and then the head is much silted up; the
Carro Road here forms the River bank

2^d Owing to the extreme tortuousness of the
channel through the Padugay
and 3^d To the fact of the channel having no
head sluice so that high floods cannot be
excluded. The Bridge at B consists of an
old massive work which does not afford
facilities for closing it and moreover the
waterway of this Bridge cannot be reduced
as it affords facilities for the escape of surplus
water from the Katavare or jungle stream which
receives the drainage of a large tract of country
and which passing into the Kunga Vorkal
a little below the point B discharges a portion
of its flood waters into the Agunda over
the surplus Calingula at C.

3rd To remedy the above defects it is
proposed to construct a new head sluice at
A and to provide a surplus calingula
immediately above it to prevent the head
from being silted. To straighten the channel

or to excavate it anew, as shown in yellow,
to form the River embankment on the Northern
bank of the channel and to alter the existing
surplus Calingula at C. 17D

4th The cost of these works amounts to
Rupees 12,500 in all. The cost of excavating
the channel with the proposed section
would be only Rs. 1,600 but the earth obtained
from the channel is only sufficient for $\frac{1}{5}$ of
the embankment and as, independently of the
protection afforded to the channel by the
embankment, the latter would not be required,
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embankment at this locality, it is necessary
to debit the cost of the embankment Rs.
7,200 to this work. Of this amount the
Villagers have consented to pay $\frac{1}{3}$ or Rs. 2,400
this, in itself, is no slight indication of the
necessity for the improvements proposed and it
is further stated that if the proposed works are
carried out 48 Acres of waste land will be
brought under cultivation and a 2nd crop will
be raised on 37.5 Acres affording an increase
of Rs. 921 of Revenue or 9 per cent on the proposed
outlay on the part of Government.

5th By providing a head sluice for the
Kunga Vorkal channel at A by which flood
waters may be excluded or the whole supply
of the channel cut off, during the fall of
heavy rain, a great portion of the drainage
brought

brought down by the Katovare or jungle stream,
acquired to above, may be carried off by the
Minga Vithal instead of breaching that
channel as it too often now does

6. — The new surplus calingula near the
head will; it is anticipated, keep the head
of the channel clear while the Calingula
at C which is to be altered so as to afford
protection to the River bank &c will tend
to keep the head clear between the head sluice
and its own position

7. — Under the new settlement which was
introduced in 1864 remissions are granted
only in very extreme cases, but from a
statement furnished by the Collector, it
would appear that in the 4 Fucias 1275 to
1278 crops on which the assessment is Rs. 1865 to 1869
218.6 have failed or the land has not been
cultivated and remissions have been
granted only to the amount of Rs. 331-12-
In addition to this it would appear that
remissions to the amount of Rs. 9663-10-9
were granted between 1854 and 1864 under
various heads such as, waste, non-cultiva-
tion of a 2^d crop &c but the Collector is
of opinion that these remissions or
deductions, as he terms them, are really
no

no indications of a defective supply
8. — The Inerasidars it appears have
to clear the head of the channel of silt 3 or
4 times during the season and the value of
the labor employed is estimated at
between Rupees 3 and 400 Annually.

9. — The Collector has countersigned the
estimate in token of his approval of the
proposed improvements

10. — This work was entered in the Budget
list submitted from this Office but does not
appear in the Budget of 1870-71 if an
allotment of Rs. 5000 were made from the
reserve in 1870-71 the work might be completed
next season or in 1871 but if no funds are
allotted till 1871-72 the work will not be completed
till 1872 for it is not possible to execute
such a work in one season if no preparations
are made for it till the 1st April.

I Have the honor to be
Sir

Yours Most Obedt Servt

H. F. Aker Capt. R.E.
Supt Engineer C. D. Durr

I have ascertained from the Superintending Engineer that there are objections to placing the head place of the Vinga Vokkal at the Caror Trichinopoly road and then making a new channel to the South of the road to the point B, where the present channel now crosses. Captain Dakes says that were this done about 2500 Rupees would have to be expended in raising the road, that there would be some difficulty in keeping the bridge at B parallel for surplus water, and at the same time in excluding flood water when the Cauvery is in fresh; and that this arrangement would be likely to meet with opposition from the occupiers of the lands near the road, as also from the Vingaaveram Menapidas who own it. Probably therefore, after paying compensation for valuable lands taken up, the saving which might be effected by making the road, the river embankment

*Wm. B. Smith Esq
City Engineer
6 Duane St*

Dr
The Secretary of War
D. D. S.

Box 32
Dec 24th March 1872.

One bound 6/10.
17/200/10.

Richards Plaster
 suitable for mending
 the Chicago Hotel and
 repairing the Census Court
 for the better supply of
 Chicago from the Village
 of West-End Hill.

Q. 4. 22 June 1870 Q. 4. 6.

46226

ment would not be sufficient to make it desirable
to adopt an arrangement, which would not be as
acceptable to the pyots as that proposed by Captain
Oakes.

John L. Linn
Fort St. George
28 March 1830
Acting Chief Engineer for Irrigation
Major R. C.
To
The Secretary to Government
Off. Department

No 227
e. Petrus A. G.

[illegible]

1. The first part of the document is a list of names and titles, including "The Hon. Mr. Justice" and "The Hon. Mr. Justice".

2. It is observed that, of the total estimated cost as stated above, Rs 2,400 will be contributed by the villagers interested, who will

will benefit considerably
by having much less work
to do in clearing the upper
part of the channel after
heavy freshes in the river.

It is estimated also that
Rs. 921 will be the increase of
Revenue from the extension
of second crop cultivation,
rendered practicable by
the improvement of the
supply.

3. Rupees 5,000 will be allotted
from the Reserve under Agri-
cultural for 1870-71 as re-
quested by Capt. Baker.

Wm. 29/3/70

To The Deputy Engineer
"Controller of the Dist.
"Rev. Dept.
"Ch. Engineer for
Sungar
Recd 22/4/70

Ans 907 & 1225
Govt. of 1870, Madras.

PUBLIC WORKS.

The Superintending Engr
6th Division

7.3.1114

Dated

Recd

G O 20 April 1870. No 1034

Nos. 226 @ 228

Nunga Vorkal Estimate of Rs
12500 for the improvement of the
Nunga Vorkal, one of the irriga-
-tion channels supplied by the
Mundam leasery in the Paddy
8th, Santhome & remarks.