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MADRAS RECORD OFFICE

Government of Madras

Public Works

DEPARTMENT

G.O. No.	2251	Press	<i>Original</i>
B.P. No.		Mis.	
Dated	6. 8.	1875	195

Not to be folded or roughly handled

Irrigation!

No. 821.

Memorandum.

It is very probable that Colonel Walker's opinion as to the want of foresight displayed in conducting the Perryour project investigations may appear to him to be justified by a consideration of the course which they have taken, but it seems to the undersigned that for a different conclusion there are reasons of value. Colonel Walker is not personally acquainted with the locality, and is unaware therefore of the physical circumstances which prevent a comprehensive view of the features of this valley being readily obtained, but this fact alone would of course not make it the less desirable to acquire a complete knowledge of the levels of the river and of the water shed, throughout the whole distance which might possibly affect the determinations of the general outlines of a project having in view the diversion of the Perryour waters, as a

preliminary to the investigation of details.
The hills and lower not covered with jungle,
are clothed with elephant grass and the
country cannot be traversed, and nothing
can be seen except here and there from
a hill top, without first cutting a path.
The examination of the country generally
therefore was a matter of difficulty, and
this general examination moreover was
not, it was thought of much moment,
because the first thing necessary was
to find a dam site possessing the neces-
sary conditions, and thereafter to see
whether such site when found could be
made use of. Saw early in the conduct
of the investigation the level of the water
shed in connection with a site (Major
Ryder's) was ascertained to be not un-
suitable, and the information thus obtained
was of value for all the subsequent work.
That site being below the junction of the
principal tributaries, and possessing prima-
ry advantages was properly examined

though

3.
though not in any great detail. It was
indeed the site highest up the river which
could be made use of. a great deal of the
time of the survey party, up to the visit by
the undersigned in 1869, had been devoted
to making a practicable path from the
low country for the transmission of sup-
plies and the keeping open of commu-
nication, for it must not be forgotten
that the Perrygo's valley is uninhabited.
It was therefore necessary that a footway
should be cut to the place where the
Camp was first established, and though
had the knowledge gained by extended
investigations been available when this
path or bridge road was constructed, pro-
bably much less than the sum spent
upon it would have been laid out. it was
by no means useless expenditure.

Refers to 16, 129
para 9 of Coll
Walker's Memo.

2. During the visit referred to sites
Nos 2 and 3 were found during an examination
of the river, which was made on a raft, and which
was carried as far as the raft could go; the raft
was taken some way down the rapid at the

lower

lower end of the pool and this rapid appearing
to go a considerable way down, site ^{seemed} to be
the lowest likely to be suitable. There were
no means of getting along the banks of the
river owing to the heavy grass and jungle,
and only along elephant tracks could the
holer to camp be made. Instructions <sup>Para 6 of Doc
No 287 printed
in 8th. 26.800
1267. 1271.3.</sup> were however given for a further examination
of the river and of the hills near there, and
this resulted in the discovery of the site
adopted in Mr. R. Smith's project, and
of the places at which he proposes to pass
water across the watershed. In any case
these sites would have had to be carefully
examined and a fair estimate of the cost
of utilizing them prepared. Without such
an examination the settlement of the best
site would have been impracticable. This
examination moreover necessarily involved
much time. Not only had the site and contents
of the dam to be ascertained and the position
of the escape to be determined, but it was
 requisite also to find out what the subsoil
and the level of the rock surface was,
what

5
what soil was available for forming the
bed, what water would be forthcoming
for silting, and how it could be brought
to the places where it was required.

3. The undersigned believes therefore that
very little time has been wasted, and that
indeed it will depend much upon the
result of the further investigations desired
by Government whether there has been any
waste of time at all. Should it be found
possible to divert any material quantity
of water from the Periyar into the In-
dura District in the manner referred to
by Colonel Walker in para 11 of his memo,
it may readily be admitted that in that
case a great deal of time has been wasted
in elaborating the project in an unneces-
sarily expensive manner. This alternative
plan has not however been overlooked,
and indeed the first idea which would
occur to most Engineers would be to construct
an anicut at a part of the river which
would command or nearly command the
watershed and lead a channel therefrom

low along the side of the valley. On the visit to
the Perrigau already referred to this plan
was discussed with, as a result, the con-
clusion that first the outlet would
have to be so placed as to have but a small
an. Calcutt basin above it; and that the
construction of the channel would, from the
extreme steepness of the hill sides generally,
be a very expensive work and its efficient
maintenance almost impracticable, —
and, secondly, that the character of the freshets
of the river the supply, without a moderating
reservoir on the river, very inadequate and
precarious; and that altogether therefore
in this way no benefit of importance
would be conferred on the Madras District.
Unless a very considerable supply of water
be secured, it would not be worthwhile
to carry out any project on the Perrigau,
and it is no essential condition of success
in any project that the works should need
little or no continuous attention. Storage
in the plains would be a substitute for storage
on the river unless nearly all the water,

in all but heavy freshets, could be passed
across the watershed. It is believed that
no one who has visited the Perrigau could
contemplate the construction of such a
channel as would be needed to convey the
quantity of water which would have to be
carried for storage in the plains. The late
Surgeon Ryves no doubt thought that
such storage was feasible, but he did
not intend to convey the water by many
miles of channel, but to pass it through
the watershed saddle from the pond above
the dam at site No. 1. It is unnecessary
however further to anticipate the result
of the investigations which are to be
instituted. The undersigned has spent
but a few days at the Perrigau; and his
knowledge of the valley is vastly inferior
to that obtained by Captain Pennycuik and
Mr. R. Smith, whose investigations and
proposals have been made not without
reference to other possible arrangements,
but with reference to what have been
deemed

decided rightly or wrongly, to be essential conditions of a project, the execution of which would answer the intentions of Government by conferring material benefit upon the Madras District.

4. With regard to the selection of an officer to ascertain what alternative plan if any, of diverting Perrygaur water may be feasible, the undersigned thinks that either Captain Pennycook or Mr R. Smith, should be nominated to the duty, and that the services of the former can probably be spared with the lesser inconvenience. Captain Pennycook will return from leave in July and he can then draw up an outline of the investigation and submit his proposals for Establishment &c. It is not practicable to say how long the survey and levels will take, because every yard of ground traversed will need to be cleared, but as the season at the Perrygaur does not close until

until February, it is possible that there may be time to do all that is required this season, in which case the work will not cost more than from 12 to 15 thousand Rupees, exclusive of Captain Pennycook's salary and allowances. He should receive a personal allowance of 150 Rupees a month and double travelling allowance while employed on the investigations to the westward of Cumbum, there being the allowance granted to Mr R. Smith vide G.O. No 980 of the 8th April 1870.

5. At the present moment the nomination of an officer to the charge of the North Arcot District during Captain Pennycook's absence is a matter of difficulty, but some little time will elapse before that officer will be ready to go to the Perrygaur, and General Walker may in the meantime be able to

to make the necessary arrangements.

Leut. Col. M. C.
Off. Chief Engineer

Polacambard
22 July 1875

Co. The Off. Secretary to Genl.
S. A. L.

1st 29th W 9
112: at

most

D. off. at
signe

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188: at

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112: at
signe, at the end
of the

Note by the Chief Eng. for Irrigation
 No 237 date 27. Oct/69
 to No 1105 - 28. July/70
 to No 1107 - 10. Aug/70
 to 28. July/69 No 669-660
 " 36. Nov/70 " 630-631
 " 8. Oct/70 " 123-123
 " 12. May/71 " 183-184
 " 9. Nov/71 " 149-151
 " 19. Dec/71 " 427-428
 " 17. Feb/71 " 379-380
 " 27. Mar/71 " 681-682
 " 14. May/71 " 71-72
 " 18. Mar/75 " 450-452
 " 15. Apr/75 " 388-389
 " 30. Dec/75 " 692-703

P. W. 1895 Sept.
 No. 5157

From

The Offg. Chief
 Engineer

Dated 22. July/1895.
 Recd. 9. Aug/1895.

No. 821.

Memo: on the past
 Operations connected
 with the ~~Ben~~ ^{Ben} ~~gaur~~ ^{gaur}
 project &c, Madras
 Dist.

P.O. 2281. 6-8-75

Note by the Chief Engineer for Irrigation

Am 11th July 1895
 The Co. to be sent to the
 ...
 The Ben gaur
 ... at Madras 6/5

Let

Note by the Chief Engineer for Irrigation
No. 727 dated Jan. 1st 1895

P. W. 1895 Sept.

Note by the Chief Engineer for Irrigation
1895

The only point in this letter which calls for remark is that in para 4, which refers to the maximum velocity to be allowed in the new proposed channels from the Vignol. It will be necessary for Mr. Smith to see what velocities in existing channels the soil has withstood without decomposition and then rather than the enormous velocities which are appropriate in Delta tracts, to endeavor to guide - It may also be possible, with a view to obviate as much as possible the necessity for masonry falls, to make the parts of the main canals which are not in heavy cutting, wide & shallow, instead of narrow and deep, as by allowing a much greater slope but may be allowed. On side long form, the canals may possibly be carried on such levels as to admit of the depth of water being regulated as most convenient without adding to the quantity of excavation.

Aug. 1895 -

Chief Engineer
John A. Smith
Irrigation
George A. Brown
1895

10-171
 General
 The Deputy Genl
 Dr. O'Connell

at 10:00
 10-171-3 Aug 7

Letter in the program
 Report to the Pres.
 our investigations in
 June 1870

10103
 Memorandum
 Supply to the letter no 59 of the 20 inst. from the
 Special Executive Engineer on special duty in
 Madras, the undersigned has the honor to
 state that he considers that it will be safe to
 place the main channels of the ~~district~~ in connection
 with the Vignar, so as to carry 2 cubic yards per
 acre per hour for all the direct irrigation, plus
 1 cu. yd. per acre per hour for all the area under
 tanks. Thus Captain Poyon in para 3 of
 7 August 1867 his report takes 78,094 acres as the area of the
 first or low season crop. ~~the~~ ^{the} total
 quantity to be carried ^{will} be 156,188
 $78,094 \times 2 = 156,188$
 Also the tank irrigation ~~is~~ ^{is} 24,666 + $\frac{25,714}{2} = 38,023 + 1 = 38,023$
 Total directly supplied ^{is} 194,211
 There are however other considerations to be taken
 into account for while the above allowance would
 suffice for the Poyon as to supply during
 every 10 days of the irrigating season a sufficient
 supply of water, it would not do were that river
 to contain a short supply for a longer period
 2. The undersigned thinks that it will be well in
 the first instance to make out at about the
 discharges of the Poyon from the letter date
 that ^{has been} available since Captain Poyon's report
 was written in June 1867 and the first crop
 is known to be available that it will be available

probably to consider the time to extend from the middle of May to the end of October. Water may be required for such beds before the middle of May, though this is doubtful, but the supply for this purpose will probably be much less than will be available - For certain months the proportion of discharge of the river to the registered rainfall at the two Camps has been ascertained: for the rest of the time the calculation must be made approximately in this way. In the months during which the rainfall at the Poyanur has been registered, that fall has a certain proportion to the rain at the stations mentioned in para 2 of Captain Rye's report. The rainfall of these stations in the other months is known, and an approximation to the rainfall at, & thence to the discharge of, the Poyanur may thus be obtained.

3. Such a table having been prepared it will be necessary to see in what 10 days' periods of the cultivating season the supply will be deficient, and to provide for making up this deficiency by storage; & to enable this storage to be effected, the channels will have to carry as a maximum 2 Cys per acre per hour, plus the quantity to be stored in the time available. Totals are example: about the 118 million a month would be needed for 78000 acres. In the report para 29

75 millions are put down for September, while August has 2 millions less than the 118 - the other months of the period have about enough. Consequently 45 + 2 millions would have to be stored in June & July and, weather being reliable, 22½ millions might be carried in each month, & the maximum discharge of the channels would be 118 + 22½ = 140½ millions or 145.128 Cys are lower. With limited data and a division of each month into 3 periods of (about) 10 days each, the calculation may be more accurately made than it is. 4 - It will be necessary, before finally deciding on the dimensions of the channels to ascertain what tanks exist for storage, for it may be found that different parts of the country may be differently circumstanced, & the channels may therefore require to be arranged to suit the requirements of the varying kinds.

5 - With regard also to the area for irrigation to be provided, it must be noticed that while this area should not be in excess of the ascertainable or probable water supply available, it will be necessary to provide the whole area that can be conveniently commanded, & to provide, subject to the above restriction, for irrigating a certain portion say from $\frac{1}{2}$ to $\frac{2}{3}$ of this area. So that when the facilities for

Storage and distribution may be first, it might
be advisable to allow for the larger proportion, and
allowance for only half the amount commanded or
perhaps even less than this.

6. It will be assumed that
1. the water supply, its character, strength
determined as accurately as possible.

2. the area of country Commanded should
be ascertained up to the boundary of the Govt. Taluqa
is here meant.

3. it should be well to ascertain to
1. what proportion of the Commanded area
can be supplied.

2. where the selection should be made
4. the works should be designed to meet these
conditions.

7. With regard to the system of cultivation, it will
be advisable to ascertain what is the practice in
the Combrum valley. This may be liable to variation
with reference to the date on which the Poryaur
the Sorrooly respectively receive their early frosts,
but this thought that a good deal depends upon
the time when showers of rain may be expected.

W. 27/7/70

From the Supg Engrs
9-11-07 & 10-2-70

No 287

To

The Offg. Supg
Engineer on Duty

Dated 27 Oct 59

Desd 2nd Nov 59

PN-90-6 August/75
N-2251

Requests to re-
port whether accurate
registers have been
kept since the 7th
Augt 1867 at Perang
Chittany & Vygar
pavement so that
copies may be furnished
to St. Coaker

for him for all the
under Tanks

Mr D

25.

I have read with great interest
the Memo: by the ag Chief
Engineer on the past operations
connected with the Perryour
project and on the special
investigations which it is
proposed to conduct with
a view to an alternative
project, suggested by J. H.
Walker.

A perusal of the Memo, induces
me to think that the papers
may with advantage be
communicated to W. R.

I have no objection
but we must ask of
Walker the full & as
soon - He must not
29/7 59

From the Staff Surge
9.11.75 8 June 70

No 287

To

27

Smith, & Captain Pennycook
with a view to those officers
submitting either separately
or in communication -

Their views on the
proposed alternative project

I think such a course desirable
before we actually embark
on what may perhaps
prove a somewhat
costly investigation. RM

27. July 75

I am sure - that the
reference to ask Col.
Mullins & associate
them with the committee
& committee members
a report. E.P.

I think this the best plan
General Walker has his local
knowledge and the scheme
he puts forward must be
checked by the troops and
investigated in detail by his
subordinates. I should not defer
action until his return. J.P.
2.8.75.

provision
copies may be furnished
to Lt. Col. Cooker.

for him for all the
under Tanks.

a memorandum given

From the Staff Surge
9-11-87 8/10/70

No 287

5.

5157

Perryant project

H. B. C.
2-8-70

Cire.

90-6 August 75-12281

permanently
copies may be furnished
to St. Co. 100

per home for all the
under Tanks

Mr. 29
Pres. of the Madras Govt
Read the following.

Memo by the Off. Chief Eng. (H. B. C.) of 22nd July/75

The Honorable the
Governor in Council
approves of the selection
of Captain Perryant
for the further investiga-
tions in connection
with the Perryant Pro-
ject ordered in G.O. 30
April 1876, No 1173, and
that officer will on his
return from privilege
leave draw up and sub-
mit through the Chief
Engineer for Irrigation
a Memorandum giving
an

an outline of the work ~~the~~
done, and of the temporary
establishment required.

He will be prepared to
leave North Brist for the
Poryaur as soon as an
officer may be nominated
for the charge of that
District during his ab-
sence.

2. A personal allowance
of Rupees 100 a month
and double travelling
allowance will be
granted to Captain Penny-
cuck while employed to
the westward of Lumbum.

No. 2287 P. W. Dept.
33
Proceedings of the Master Genl.

Under date the 6th Augt/95.

Read the following.

Memo. by the Chief Engr { P.W. No 821 of 26/8/95
for Irrigation }

The foregoing
Memorandum by Lt Col.
Mullins indicates that
the Alternative scheme
suggested by the Chief
Engineer, P.W. D., and
referred to in para 4 of
the order of the 30th April
last, No 1193, has been
already considered and
that, though the papers re-
corded in those and previous
Proceedings have not con-
tained information as

9/8-6 Augt/95 No 2287

Approved by
Substituted -
in following manner

by 6/1

M
5/8

LA

P.W.C.
D

as to the difficulties which
the natural features of
the Perryour Valley pre-
sent to the formation of
an intercepting Channel,
to lead water from a
sufficiently high level
to command or nearly
command the lowest
saddle and to turn water
into the Soarooliyaur and
Vigay, the Officers who
have been employed on
the project, and whose
knowledge of the country
necessarily greatly ex-
ceeds that possessed
by Lt Col. Mullins may
be able without further
investigation to submit
such a report as will
enable Government to
decide at once whether

35
there is such a probability
of any alternative scheme
being found feasible as
would make it desirable
to undertake a fresh
examination of the river
and watershed. At any
rate it appears to the
Honble the Governor in
Council that, before
commencing further field
operations, the opinions
of Mr R. Smith and Capt
Pennycook on the sub-
ject may with advantage
be taken into consideration,
and His Excellency in
Council resolves therefore
to instruct those Officers
to arrange a meeting at
any place which may be
most convenient to them,
and to draw up either

a joint report or separate reports on the question raised as early as may be practicable.

2. To these Officers also will be referred Lt Col. Fisher's opinion that a high dam on the Perryauw is unnecessary and that there is a point on the watershed to the east of the Avatum hill some 500 or 600 feet lower than the pass on the west side of that hill through which the fooda-lao road has been taken, as were there such a low saddle it might materially affect the circumstances of the Perryauw Project.

+ Pro. No 755 of 18 March 75.

Pro. No 764 of 18 March 75
" 1040 of 15 April

— These Officers take
note of the fact that
the Perryauw is

3. Such of the plans of the project as may be required will be made available on an intimation from Mr. R. Smith as to the place ^{at} they should be sent.

W. B. G.

H. H. H. H.	— 6	with B. G.
S. S. A. A.	— 6	— 4 2 noted above
Ch. H. H. H.	— 4	— 5
Con. H. H. H.	— 5	— 5

SC Draft - 19-8-75

W. B. G.

11-2-18 BU

5/15/17
★
Govt. of 1875: Madras.
PUBLIC WORKS.

13. 4. 24

Mr. St. John
Nellie

Dist.
In.
Recd.

Encl.

G. O. 2287

General Walker.

Ref. passed by Regt.
Nos. 119-120

Perryour Project, Madras.
Passing orders on the
Memo: by the Cffg: Chief
Engineer on the past
operations connected with
the —, & on the special
investigations which it
is proposed to conduct
with a view to an alternate
project suggested by Major