

(1) Number of pages _____

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MADRAS RECORD OFFICE.**Government of Madras.****Public Works DEPARTMENT.**

G.O. No. 80	Press
154-86	Mis.
Dated	18.6.22

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
9th January 1863.*

No. 154. Read the following Endorsement of the Inspector General, Indian Medical Department, dated Fort St. George, 6th January 1863, No. 8:—

Read the following letter from the Deputy Inspector General, Indian Medical Department, Presidency Division, to the Secretary to Inspector General, Indian Medical Department, Fort St. George, dated 2nd January 1863, No. 2.

In forwarding, for the information of the Inspector General, the accompanying letter* from the Surgeon of the General Hospital, I have the honor to suggest that it be transmitted to the Committee appointed, under the Orders of Government, No. 3,858, dated 11th December 1867, to take into consideration the subject of the water supply, &c., of the General Hospital.

From Surgeon J. L. PAUL, M D and M A, General Hospital, to the Deputy Inspector General of Hospitals, Indian Medical Department, Presidency Division, dated Madras, 31st December 1867, No 513.

1. In returning Proceedings of Government, No 236 of the 11th December 1867, permit me to make a few remarks on the Acting Superintending Engineer's letter, No 4,153, therein contained, as one of its paragraphs, if unanswered, would induce the Head of the Department to conclude that the Medical Officers of the General Hospital had misled the Engineer's Department in the first instance with regard to the water requirements of the Hospital

2. In paragraph 4 of the Acting Superintending Engineer's letter he states "the reservoir, whatever Dr. Paul may now say to the contrary, was estimated for of a capacity to hold a supply for the whole Hospital, calculated on the returns given me by the Medical Officers themselves of the Institution, and based on the number of gallons required per head." In September 1866, I was requested to state the quantity of water required for the use of the European patients of the General Hospital, and I submitted the following reply through the Deputy Inspector General of Hospitals —

"From Surgeon J L PAUL, General Hospital, to the Deputy Inspector General of Hospitals, Presidency Division, dated Madras, 17th September 1866, No 423

"With reference to your Memorandum, No 3 251, enclosing a letter from the Executive Engineer, Presidency, I have the honor to state that a daily supply of about two thousand eight hundred and fifty gallons of water will be required for the use of the Civil patients accommodated in the upper-story of the General Hospital."

No estimate was ever asked for of the water requirements of the Native portion of the General Hospital The allotment of the Military Hospital was fixed by the Sanitary Commission at 196 beds, so that no quantity much under 5,000 gallons daily ($196 \times 25 = 4,900$) is likely to have been asked for by the Surgeon of H M's Regiment It appears to me, therefore, that the Acting Superintending Engineer's remark, quoted in the commencement of this paragraph, is not quite justified by facts

3. In answer to my objection that the work must fail in its object as a water gauge, because it will not show where the expenditure takes place, the Acting Superintending Engineer states that the reservoir will register the quantity supplied to the Institutions This it is capable of doing, but it will not show at which of the Institutions the expenditure takes place It is suggested that arrangements might be made for shutting off the Military during the supply of the Civil Hospital, an expedient, I venture to say, that the Surgeon of H. M's Regimental Hospital will not approve of

4. In paragraph 3 the Acting Superintending Engineer states the uses of the contemplated reservoir are — First the storage of water, thereby reducing the establishment for attending to the

*Proceedings of the Madras Government, Public Works Department,
9th January 1863.*

cocks at the Hospital I beg to reiterate what I stated in my former letter, that there is no such establishment in the Civil General Hospital, and none is required

Secondly.—For flushing the open drains To use the Seven Wells' water for flushing purposes would be very great waste of a commodity confessedly scarce, and the recommendation so to do, coming from the Superintending Engineer, is most inconsistent, as the very next paragraph of his letter sets forth that the increased establishment at the Seven Wells, with its greatest efforts, is unable to do more than keep the water at its proper head in the supply cistern, now, be it remarked, when the expenditure of water in the Hospital is not one-third of what it will be when proper means exist for transmitting water to the Europeans' wards in the requisite quantity. I never contemplated any portion of the Seven Wells' water being turned on to flush the drains, else I should have considered it necessary to double the quantity estimated for. Were it necessary to flush the drains, there are several wells in the compound available; but it seems necessary to add that no amount of water will clear the drains without the aid of the broom.

Thirdly.—With regard to the third use of the reservoir mentioned by the Superintending Engineer, I beg to state that there has been no failure of water pressure in the pipes hitherto; and that the supply has been ample, except when shut off purposely by the Engineer's Department.

5 In paragraph 1 of his letter the Superintending Engineer complains that I have not fairly represented the objects of the reservoir in my letter No 410, of the 15th October I could only state such objects as he himself represented to the Government in his former letter while recommending the work, but now that the full uses of the contemplated reservoir are put forth, I trust I have been able to show that it is either unnecessary or that it must fail to meet the ends expected.

Forwarded to the Secretary to Government, Public Works Department, with reference to the Proceedings of Government No. 3,858, of the 11th ultimo.

(Signed) W. MACKENZIE, M. D.,
Inspector General, Indian Medical Department.

No. 155. ORDER THEREON, 9th January 1863, No. 80.

CIVIL WORKS, No. 21.

Communicated to the undermen-
tioned Officers.—

Lieutenant-Colonel J. C. Anderson, R. E., Chief Engineer for Irrigation.
Surgeon Major J. L. Ranking, Sanitary Commissioner.

Surgeon Major G. Smith, M. D., Principal of the Medical College.

(True Extract.)

Colonel, R. E.,
Secretary to Government.

To Lieutenant-Colonel J. C. Anderson, R. E., Chief Engineer for Irrigation.
„ Surgeon Major J. L. Ranking, Sanitary Commissioner

„ Surgeon Major G. Smith, M. D., Principal of the Medical College.
To the Superintending Engineer, 4th Division.

„ Public Department
„ Military do
„ Inspector General of the Indian Medical Department.

Exd S T. Augustin.

11513. General Hospital
Madras 31st December 1867.
From Surgeon J. & Paul M. D. and M. D.,
General Hospital.

To The Deputy Inspector General
of Hospitals
Indian Medical Department
Presidency Division.

Sir
In returning proceedings of
Government No 236 of the 11th December 1867,
permit me to make a few remarks on the Acting
Superintending Engineer's letter No 4153 therein
Contained as one of its paragraphs is unanswered,
would induce the Head of the Department to
conclude that the Medical Officers of the General
Hospital had misled the Engineer's Department
in the first instance with regard to the water requirements
of the Hospital.

2. In para 11 of the Acting Superin-
tending Engineer's letter he states "the reservoir, what-
ever Dr Paul may now say to the contrary was
"estimated for of a capacity to hold a supply for the
"whole Hospital calculated on the returns given me
"by the Medical Officers themselves of the Institution
"and based on the number of gallons required for
"head." In September 1866 I was requested to state
the quantity of water required for the use of the European
patients of the General Hospital and I submitted
the following reply through the Deputy Inspector

General of Hospitals.

No 423

Madras 17th September 1866.
To The Deputy Super. Genl of Hospitals
Presidency Division.

Sir/

With reference to your Memo No 3251
inclosing a letter from the Executive Engineer
Presidency, I have the honor to state, that a daily
supply of about two thousand eight hundred and
fifty Gallons of water will be required for the use
of the Civil patients accommodated in the upper
story of the General Hospital.

Have the honor to be &c
Signed J. L. Paul. Surgeon.
General Hospital.

No estimate was ever asked for of the water require-
ments of the Native portion of the General Hospital.
The allotment of the Military Hospital was fixed
by the Sanitary Commission at 196 beds, so that no
quantity much under 5,000 Gallons daily (196 x 25 = 4900)
is likely to have been asked for by the Surgeon of H. M. S.
Regiment. It appears to me therefore that the Acting
Superintending Engineer's remark quoted in the
Commencement of this para is not quite justified by facts.
3. In answer to my objection that
the work must fail in its object as a Water Gauge
place, the Acting Superintending Engineer states
that the Acceptor will register the quantity supplied
to the Institutions. This it is capable of doing, but
it will not show at which of the Institutions the

expenditure takes place. It is suggested that
arrangements might be made for shutting off
the Military during the supply of the Civil Hospital,
an expedient, I venture to say that the Surgeon
of H. M. S. Regimental Hospital will not approve of.
4. In para 3 the Acting Superintend-
ing Engineer states the uses of the contemplated
Reservoir, viz- 1st the storage of water thereby
serving the Establishment for attending to the
Cooks at the Hospital. I beg to re-iterate what
I stated in my former letter that there is no
such Establishment in the Civil General Hospital
and none is required.

2nd For flushing the Open Drains.
To use the Spring Wells' water for flushing purposes
would be very great waste of a Commodity com-
paratively scarce and the recommendation as to
do coming from the Superintending Engineer is
most unwarranted, as the very next paragraph
of his letter sets forth that the increased Establishment
at the Spring Wells with its greatest efforts is unable
to do more than keep the water at its proper level
in the Supply Cistern; now, be it remarked, when
the dependence of water in the Hospital is not one
third of what it will be, when proper means
exist for transmitting water to the Europeans
Wards in the requisite quantity. I never contem-
plated any portion of the Spring Wells water being
turned on to flush the drains else I should have
considered it necessary to double the quantity
estimated for - Was it necessary to flush the

drains that are several Wells in the Compound available; but it seems necessary to add that no amount of Water will clear the drains without the aid of the Buons.

3rd With regard to the 3rd use of the Reservoir mentioned by the Superintending Engineer I beg to state that there has been no failure of Water pressure in the pipes hitherto, and that the supply has been ample, except when shut off purposely by the Engineer's Department.

In para 1 of his letter the Superintending Engineer complains that I have not fairly represented the objects of the reservoir in my Letter No 410 of the 15th Octbr. I could only state such objects as he himself presented to the Government in his former letter while recommending the work; but now, that the full uses of the contemplated reservoir are put forth, I trust I have been able to show, that it is either unnecessary or that must fail to meet the ends reported.

I have the honor to be

Sir

Your Most Obedient Servant

A. P. Paul
General Hospital.

Proclunb Wd

Surgeon Major in charge
Office of Dy. Surgeon General
Indian Med. Dept. Bangalore

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No 2
Office of Dy. Surgeon General
Indian Medical Department
1868 May 12/68

L 10
Linn

Surgeon J. L. Paul
In D. M. of
General Hospital.

Dated 31st Decr/67

P. N. 4/68

No 513.

Subject

Refers to preceding
of 23rd Decr of the 11th
Decr 1867.

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the Surgeon
at, that it
in the orders
to take into
of the General

to be

servant

Not
in charge
Director Genl
Department
American

Superintendent

drains there are several Wells in the Compound available; but it seems necessary to add that no amount of water will clear the drains without the aid of the Broom.

30th Water regard to the 3rd use of the Reservoir mentioned in the Letter.

I beg to state the supply of water for the purpose of

intending is not fairly

presented in the letter which now that a reservoir is able to show that more

Proctor M.D.
Surgeon Major in Charge
Office of Dy. Magistrate
Indian Med. Dep. Bangalore

Required for whole hospital per day gallons about 13000

also Reservoir to contain nearly 1 1/2 days supply - 20000 gal. then with a depth of 4 feet & width 16 would require a length of

$$\frac{20000}{6\frac{1}{2} \times 4 \times 16} = \frac{20000}{400} = 50 \text{ feet.}$$

for upper story. Day daily - 7200 gallons. with depth 4' & width 16 - required length of upper reservoir

$$\frac{7200}{6\frac{1}{2} \times 4 \times 16} = \frac{7200}{400} = 18 \text{ feet.}$$

The bucket at the seven water used each 10 gallons - but they are not emptied off completely at each lift - & there is a good deal of leakage - The buckets are raised about 22 feet - clear - for times for waste - but unless used close supervision - 5 gallons - delivered

No 2.
Office of Dy. Magistrate in charge
Indian Medical Department
Presidence Division 24. 1. 1868.

on of the the Surgeon at, that it der the orders. to take into of the General

to be

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interior
Department

Division

drains there are several Wells in the Compound available; but it seems necessary to add that no amount of Water will clear the drains without the aid of the Pumps.

3rd With regard to the 3rd use of the Reservoir mentioned by the Sub-committee.

I beg to state Water passes the supply off purpose.

intending & not fairly reservoir.

I could on present is better when now, that reservoir, able to show that must

4 hours a minute a 20 galls per minute as much as can be calculated on

20 galls per minute = 1200. galls per hour to that upper reservoir at Hospital could be filled in 6 hours - by a single field tank - worked by two men -

Total fall from 7 wells reservoir to Hospital lower floor - $14.25 + 4.5 = 18.75$ ft. allow fall of reservoir to be 3 ft. above Hospital floor - remaining head. 15.75 ft. depth of reservoir 4 ft. - average head 13.75 ft. say 13 ft.

distance - 8726. but as this may be increased - suppose it 10000 ft.

$$\text{Gallons delivered per hour} = \sqrt{\frac{(15.75)^5 H}{D^5}} \quad \begin{matrix} D=3 \\ H=13 \\ I=10000 \end{matrix}$$

$$= \frac{3.6}{100} \sqrt{\frac{2075 \times 3.6 \times 6.71}{100}} = 3280 = 3280 \text{ galls. } 84.8$$

so that lower reservoir would be filled in between 6 & 7 hours.

Proctor M.D.

Surgeon Major in Charge
Office of Dy. Inspector Genl
Indian Med. Dept. Pres. Surgeon

25.11.1867
Thurs. day 1868
2. 1/54

Office of Deputy Inspector General
Indian Medical Department
Presidency Division 24 January 1868.
Rem.
The Deputy Inspector General
Indian Medical Department
Presidency Division

To
The Secretary to Inspector General
Indian Medical Department
Fort Saint George

Sir,

In forwarding for the information of the Inspector General, the accompanying letter from the Surgeon of the General Hospital, I have the honor to suggest, that it be transmitted to the Committee appointed under the orders of Government No 3858 dated 11th December 1867, to take into consideration, the subject of the water supply to of the General Hospital.

I have the honor to be

Sir

Your most obed^t Servant

W. Smith M.D.

Surgeon Major in Charge
Office of Dy. Inspector Genl
Indian Med. Dept. Pres. Surgeon
Presidency Division

