

(1) Number of pages _____

(2) Date of repair _____

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. 3714	Press
587-88	~~Mis.~~
Dated 27 11	1868.

Not to be folded or roughly handled

(2)

Proceedings of the Madras Government, Public Works Department,
27th November 1868.

No. 587. Read the following letter from the Superintending Engineer, 7th Division, to the Secretary to Government, Public Works Department, dated Coonoor, 5th November 1868, No. 153 :—

I have the honor to forward, for the information of Government, an interesting report and analysis of the water proposed to be stored for supply of Ootacamund, obligingly prepared by Mr. Broughton, and placed by him at Major Farewell's disposal.

From J. BROUGHTON, Esq., to Major W. FAREWELL, dated Ootacamund, 31st October 1868.

1. I have made an analysis of the water you furnished me with on September 23rd, of "water proposed to be stored in Marly Mund Reservoir for the supply of Ootacamund, taken at site of "embankment."

2. The form of analysis adopted was that now employed by Professor Frankland, and exemplified in the returns of the Registrar General, &c., &c., my motive for the examination being to ascertain its suitability for my own manufacturing purposes, I have been led to make some trifling modification in the details.

The water contained in 100,000 parts*—

Total solid matter including organic matter and combined water...	3.08 parts.
Do. after ignition	2.25
Lime	0.24
Silica	0.26
Soda	0.67
Potash	0.18
Carbonic acid	0.71
Chlorine	0.04
Magnesia	none
Sulphuric Acid	faint traces.
Nitrates	do.

3. The nature of the organic matter was also investigated, and the amounts of its contained carbon and nitrogen were determined. 100,000 parts of the water contained—

Organic Carbon	0.24
Do. Nitrogen	0.01

4. The above results show that the water is a very pure one, unequalled in quality by any at present supplied to English or Continental towns. The only British water supply that approaches it in quality is that of Glasgow from Loch Katrine. The amount of organic matter is small, and the proportions of nitrogen and carbon indicate its vegetable origin and harmless character. The amount of lime salts is singularly small, indeed the water has scarcely any perceptible hardness. From these qualities the water is admirably fit for domestic and manufacturing purposes, and in nearly all technical applications is practically equal to artificially prepared distilled water.

5. The advantages of its use in steam boilers must be great, from the absence of insoluble deposits, and the consequent avoidance of the inconvenience and loss of heat occasioned by the use of hard waters.

6. I also made some experiments to ascertain whether, from the purity of the water, it would have any action upon lead, this is a matter of considerable sanitary importance if it be conveyed through pipes of that metal; strips of bright lead were immersed in the water for a fortnight, at the end of that time it was carefully tested if any of the metal had passed into solution, but not a trace was to be detected.

7. The amount of ammonia present was far less than that usually contained in rain water: 100,000 parts contained but 0.0007 part of ammonia.

The geological formation of the hills, and the attenuation of the air on the plateau, are doubtless the causes to which the great natural purity of the water is due.

* The numbers given can be readily reduced to the standard of "grains in a gallon" by multiplying by 7 and shifting the decimal point a single place to the left.

Proceedings of the Madras Government, Public Works Department,
27th November 1863.

No. 158.

Forwarded to the Superintending Engineer, 7th Division, for information, and
submission to Government if he should think fit.

Ootacamund,
3rd November 1863.

(Signed) W. FAREWELL, Major,
Executive Engineer.

No. 588.

ORDER THEREON, 27th November 1863, No. 3,714.

CIVIL WORKS, No. 92.

The Superintending Engineer
of the 7th Division will convey to
Mr. Broughton the thanks of Govern-

ment for the report and analysis referred to in these papers.

(True Extract.)

Colonel, R. E.,

Secretary to Government.

To the Superintending Engineer, 7th Division.
" Sanitary Commissioner for Madras.
" Public Department.
" Editors' Table.

Ex. S. T. Anger.

Civil Works Department 522

No 3714

Proceedings of the Madras Government

No 158

Super. Engr. Office 7th Div
Gowans 27th November 1863 following

Colonel C. M. Walker R.E.
Super. Engineer 7th Division

Colonel C. A. Dorr R.E.
Secretary to Government R.E.,
Madras

Sir, I have the honor to forward
Broughton's for the information of Government
an interesting Report and Analysis
of the water proposed to be stored
for supply of Ootacamund, obliging Government
by prepared by Mr. Broughton,
and placed by him at Major
Farewell's disposal. -

I have the honor to be

Yours most obedt servant

C. M. Walker R.E.
Super. Engineer 7th Div

one paper 7 " On water supply

Sanitary Commission for Madras

Public Dept

Editors' Table

It will be well to let the
general public be informed how
excellent a source of water at
Ootacamund is the water at
Ootacamund. I have the honor to be
Yours most obedt servant

W.H.

W.H.

A.T.

No. 158.

For
submiss
OOTAI
3rd Nov
No. 58
ment

From the Secy. to Govt. of Madras
(16) No. 1366
The Supg. Engineer
of the S.

To
The Secretary to Govt.
S.P.W. Madras.
Dated 6th Nov. 1868
Recd. 10

No. 153
Enclosure!
Forwards for the information
to Govt. of the
& analysis of the water
proposed to be stored
for supply of tobacco
annul, prepared by
Mr. Broughton.
No. 3714-27th Nov/68

No. 584

2116 Nov. 1868 (A. 231)

Exd. S. T. Augustin.

Am. Secy
to Govt.

Civil Works
Public Works Department

5-21

No. 3714

Proceedings of the Madras Government
Under date the 27th Nov/68

Read the following

From The Supg. Engineer of the S. P. W. E. No. 153 dated 6th Nov/68

The Superintending
Engineer of the 7th Division
will convey to Mr. Broughton
the thanks of Government
for the report and analysis
referred to in these papers.

W. B.

A. A.

To the Superintending 7th Division
3 - a Sanitary Commission for Madras
11 - in Public Dept
5 - in Editor's Table
It will be well to let the
General public be informed how
excellent & pure is the water at
Coth. Govt. by Mr. Broughton's
report on the Editor's Table

W. B.

W. B.

A. A.

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Handwritten notes at the bottom of the right page, possibly a list or a series of observations.

8-20-13

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Court of 1868, Madras

PUBLIC WORKS.

To The Superintending Engineer,
7th Division

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Dated th.

Recd. Encl.

G. O. 27th Nov 1868, No. 374

Nos. 587-588

Water proposed to be stored for
the supply of Ootacamund.

The Supy Engr. of the 7th Div. request-
ed to convey to him through the
thanks of Govt for the report
and analysis, prepared by him,
regarding the water proposed
to be stored for the supply of
Ootacamund, Coimbatore Dist.