

(1) பக்கங்களின் எண்ணிக்கை

20

(2) புதுக்கித் திருப்பிய நாள்

Nov-90

(3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம்

10-9

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

1081

P. W. D.

துறை

அரசாணை எண்.
மு. கோப்புத் தாள் எண்.

3331 W

அச்சகம்
பலவகை

நாள் :

10 - 12 - 1891

198

மடிக்கவோ கண்டபடி கையாளவோ கூடாது

10 sheets

British Museum

3331
21

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following paper :—

G.O., dated 8th December 1891, No. 6250, Revenue.

Read—the following G.O., dated 1st December 1891, No. 1012, Public :—

Read—the following letter from the Government Astronomer, dated 27th November 1891, No. 90 :—

I have the honour to address you on the following subject. I understand that Government has sanctioned the expenditure of Rs. 2,000 in rain-making experiments and I trust it will not be thought presumption on my part to suggest that, during the conduct of the experiments, special observations should be made by some competent meteorologist. The subject is one of such great practical importance that it is most desirable that all possible information should be obtained from the experiments. If the experiments about to be carried out are successful much will no doubt have been gained, but, if the meteorological conditions, under which the success is obtained, are fully known, the gain will be still greater, and, even if no rain is produced, careful observations may show whether or not it is worth repeating the experiments under other conditions.

2. The observations that I would suggest are these—

- (1) Wet and dry bulb thermometers.
- (2) Barometric readings (preferably with an Aneroid).
- (3) Rainbond observations.
- (4) Wind direction and strength.
- (5) Clouds, both upper and lower, their nature and motions.
- (6) Rainfall with accurate notes of both the amount and the time.
- (7) Very careful notes of the movement of the smoke from the explosions.
- (8) Atmospheric electricity.

3. I may add that the interest in these experiments is by no means confined to Madras, for I received a telegram a few days ago from Mr. C. Todd, Government Astronomer, Adelaide, requesting information regarding the Madras rainfall experiments in view of some that were about to be conducted by the South Australian Government.

Order—

Communicated to the Revenue Department with reference to G.O., dated 10th November 1891, No. 5786, Revenue.

Order—dated 8th December 1891, No. 6250, Revenue.

Some rain-making experiments have already been made in Bellary; if the Government Astronomer's suggestions had been received in time they would have been

10TH DECEMBER 1891, No. 3331 W., PUBLIC WORKS.

acted on. They will, however, now be communicated to the Public Works Department with an expression of opinion that they should be borne in mind in the event of further experiments being undertaken.

(True Extract.)

(Signed) C. A. GALTON,
Secretary to Government.

ORDER—dated 10th December 1891, No. 3331 W., Public Works.

Recorded.

(True Extract.)

Major, R.E.,
Under-Secy. to Govt., P.W.D.

Exd. A. D. Xavier.
Spare Copies

3331
#2

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1891} Madras.
PUBLIC WORKS.

Dated December, 10th.

Recd.

Encl.

G.O., 10th Dec. 1891, No. 3331 W.

DECEMBER.

Rain-making Experiments

Recording Proceedings of the Revenue Department, communicating, with remarks, suggestions of the Government Astronomer relative to certain information being obtained when — are undertaken.

10TH NOVEMBER 1891, Mis. No. 5786, REVENUE.

GOVERNMENT OF MADRAS.
REVENUE DEPARTMENT.

READ—the following Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), dated 2nd November 1891, No. 6310, Mis. —

MR. CLOGSTOUN.

Read—the following letter from O. WOLFE-MURRAY, Esq., Acting Collector of Cuddapah, dated 27th October 1891, Extra No. 341 :—

I have the honour to inform you I conducted another experiment with dynamite here on the 25th instant.

2. For the few preceding days, except the 24th, there had been drizzling rain fair for dry crops, but of no use for tanks, as the rain took so long in falling that not a drop of water ran anywhere. There are plenty of clouds, however, and I determined to try what explosions would do. The rain on previous days was as follows :—

	Inches.
October 22nd	..40
23rd	..30
" 24th	Nil.

Each day the rain took several hours to fall ; the 24th was similar to the preceding days, only the drizzle fell several miles away ; the 25th was going to be a similar day as far as one could judge, as there was the same kind and amount of cloud with sunshine now and then.

3. I had no time to make a balloon and there was no wind to fly a kite. Between 11 A.M. at midday in bright sunshine I exploded 100 lb. of dynamite in ten charges in ten places extending over 450 yards on a high rocky ridge $1\frac{1}{2}$ miles from here. Before 5 P.M., while the sun was still shining, heavy rain began to fall suddenly ; in less than half an hour the country was fairly swimming. Channels were running and water came into tanks ; the huts in the American Mission compound were all but flooded. Such a thing has not occurred here this year. The rain was unaccompanied by wind or thunder until it had passed onwards to the west when thunder and lightning occurred. The nature of the rain was so different to any that fell on the preceding days and to the similar but diminished drizzle that fell on the day succeeding it, which was of a similar kind, that one can hardly doubt the dynamite produced it. The shower extended over perhaps 20 to 30 square miles ; at the Taluk cutcherry 60 inches was gauged ; in other parts it was heavier ; the Sub-Collector estimated it at one inch at his house.

The explosions were arranged for minute intervals and went off as fairly as uncertain time-fuses allowed, except that one fuse failed to ignite and three explosions took place in the same minute. This experiment and those in America seem to show that if extended and gentle rain is desired, explosions should be carried out at distant intervals over a large area ; if heavy and local rain is desired, the explosions should be carried out as they were here on the 25th.

It is no doubt better to explode up aloft as less dynamite seems to be required ; but without proper electrical appliances the risk is increased and also the expenses as balloons are required.

The cost of the experiment was Rs. 170 in round number and I judge that for Rs. 1,700 all the tanks in the neighbourhood could be filled if suitable days are selected, and many thousand rupees saved to Government, to say nothing of the advantages to the ryots. I have not enough money left to carry out another similar experiment; moreover I have not the time. Even assisted by an Executive Engineer on the Railway here and by Mr. Auld (now gone away), the whole business occupied me for $4\frac{1}{2}$ hours, and as I saw to every thing myself, even to running round over rough rocks and seeing the fuses duly lighted under a midday sun, I found it extremely hard physical work, to say nothing of its danger, for according to the Executive Engineer nothing is so uncertain as dynamite and the fuses now used. I do not know if Government propose to follow the matter up. I have collected a good deal of information on the subject from Burma and America. I find much interest is taken in the matter all over India and I can put my hand on men who will supply balloons and take the matter in hand. I have also learnt how to make cheap balloons and fill them in this gasless country; they can be used over and over again. It almost seems as if the famine problem were solved and the Famine Code is to become a nonentity, at least in the South of India where, as Sir D. Brandis has observed, the amount of cloud is always far greater than in the North of India. If this should prove to be the case, I shall accept with pleasure any reward the Government may be pleased to offer.

Resolution—dated 2nd November 1891, No. 6310, Mis.

Submitted for the information of Government.

2. The thanks of the Board are due to Mr. Wolfe-Murray for the trouble he has taken in carrying out this interesting experiment.

3. Unless the state of the season renders an early repetition of the experiment very desirable, it will perhaps be well to await the report of the Commissioner appointed by the United States Government on the result of the numerous experiments in rain-making lately carried out in Texas.

(A true Copy and Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

To the Secretary to Government, Revenue Department.
Copy to the Collector of Cuddapah.

ORDER—dated 10th November 1891, Mis. No. 5786, Revenue.

The Government considers it of much importance that the investigation should be further prosecuted without delay and resolves to direct that experiments be carried out at once by the Department of Public Works at Bellary. The necessary orders will issue in that department.

2. The Financial Department will be requested to make an allotment of Rs. 2,000 for the purpose.

(True Extract.)

(Signed) C. A. GALTON,
Secretary to Government.

To the Department of Public Works.
„ the Financial Department.
„ the Commissioner of Revenue Settlement, Land Records and Agriculture.

Exd. A. Aubert.

50 Copies.

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Gobt. of {1891} Madras.
REVENUE.

Issued

Recd.

Encl.

G.O., 10th November 1891,
Mis. No. 5786.

NOVEMBER.

Rain-making experiments by
dynamite.

Considering it of much importance that the investigation of — should be further prosecuted without delay; directing the experiments to be carried out at once by the Public Works Department, Bellary; and requesting the Financial Department to make an allotment of Rs. 2000 for the purpose.

3024W D. 11. 11. 91

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P. W. DEPARTMENT.

Read the following:—

BEST & CO

Madras 23rd November 1891.

Col. Pennyquick M. E.
Chief Engineer to Government
P. W. D.

Dear Sir,

With reference to the interview which our Mining Instructor, Mr. John Harris, lately had with you with regard to the projected rain-making experiments at Bellary and elsewhere, we shall have much pleasure in placing at the disposal of Government, free of charge, 500 lbs Dynamite together with the necessary fuses and detonators for the purpose of carrying out, under the supervision of some responsible person or persons, similar experiments in or about the neighbourhood of Madras, in accordance with the method suggested by him and approved of by you.

We are, Dear Sir,
Yours faithfully,
Sexton

AGENTS NOBELS EXPLOSIVES CO. LTD.

Govt. of (1891) Madras.
REVENUE.

P. W. CURRENT No. 12446

Recd. 26.11.91

His No. 5786 d/10-11-91 Pres.

3331
6
P. W. DEPARTMENT.

Read the following:—

Letter from Messrs Best and Co. Madras,
dated 23^d November 1891.

FOR ORDERS.

+ No. 5035 C d/13-11-91.

There has been a good deal of unexplained delay in carrying out the experiments ordered in G. O. 3024 W of 11th Novr. 1891, the detailed instructions for which were sent to the Supty. Engineer III Circle on the 13th instant, the explosives having been sent from Madras on the 16th. The Supty. Engineer reports that he proposes to carry them out on the 28th instant, and it will be well to await the

the result of these before
undertaking any fresh
ones.

HM

2. If the weather at
Bellary is anything
like what it is here
the undersigned has
very little hope of any
result.

I anticipate some in
any case
WCO

3. In the meantime
Messrs Best and Co
might be thanked
for their offer and
informed that the
undersigned will com-
municate with them
if it is considered
desirable to carry
out any further ex-
periments.

Yes.

WCO
26 Nov.

S

25.11

W

25.11-91, R26-11-91

No. 5333 of 27-11-91

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S.

Messrs Best & Co.

Gentlemen

I acknowledge
receipt of your letter of
3rd Instant, I have the hon-
or to thank you for the offer
therein made of the dynamite
requisite for carrying out
experiments in the neighbour-
hood of Masoor for proce-
ding rain. I shall be glad
to avail myself of this offer
if, after the trial at Bellary
on the 28th Instant, it is con-
sidered desirable to continue
the experiments in Masoor,
and shall in this case, address
you further in the matter.
It would be well to await the
result of the experiments at Bellary
before undertaking any further

The Meteorological Commission

Prisco

I have 2c

5003

27-11-91

EW

L 27-11

9 27-11

In 5333 C of 27-11-91

Read the following

G.O. dated 8 Dec 1891, No 1012

to read again the following
G.O. dated 1 Dec 1891, No 1012

REVENUE DEPARTMENT

3331/9

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following Proceedings

of the Public Department dated 1 December 1891 No 1012 on the following letter from the Government Astronomer dated 27 November 1891 No 90.

I have the honor to address you on the following subject. I understand that Government has sanctioned the expenditure of Rs 2000 in train-making experiments and I trust it will not be thought a presumption on my part to suggest that during the conduct of the experiments special observations should be made by some competent meteorologist. The subject is one of such great practical importance that it is most desirable that all possible information should be obtained from the experiments. If the experiments about to be carried out are successful much will no doubt have been gained, but if the meteorological conditions under

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2. The observations that I would suggest are these:-

- (1) Wet and dry bulb thermometers
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- (7) Very careful notes of the movement of the smoke from the explosions
- (8) Atmospheric Electricity

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True Extract

Secretary to Govt

To

The P.W. Dept.

.. Bd of Rev. Roads

.. Asst Astronomer

Wm P. D.

B. & R.
civil work
Dec 9 10 51

No. 3331 Wd 10 - Dec/91

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For

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Govt. of Madras.

PUBLIC WORKS.

4/12/91

10.XII. 91. 333/W

Rain making
experiment.

Recording Pro: of
the Revenue dept.
concurring with
remarks suggestions
of the Government
Astronomer
relative to certain
information being
obtained when
— are under-
taken.

(10)

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5 C. 10.XII.

4/12/91

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