Public Wks

~~Marine~~ (1896) Department.

G.O., No. 230

Dated 11/8/96

[Despatch Abstract.]

Observatory at Potacamund—
Pres Recommends pt regarding the
seat value of having an
arch abutment on the top of the
Doddabetta peak. Communicates
to the Supt Engr Ty Circle

M. 6.
2,000—23-10-96.

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

P. W. CURRENT No. 6773

P. W. Cr=

Govt. of {1896} Madras.

REVENUE.

125 c

Rec'd 23/7/96.
Regd 27.7.96

No. 2301 W. dy 11 August 1896

Communicated to the Supdg Engr IV circle.

30/7/96

Issued

Recd. *Encl.*

G.O., Nos. 278, 278A,
22nd June 1896.

JUNE.

Observatory.

Concurring in the opinion of the Meteorological Reporter to the Government of India that an — at Ootacamund with a branch on the top of the Dodabetta Peak will be of much value in connection with the meteorology of Southern India and approving generally his scheme for the establishment and maintenance of such a double observatory.

Cr

INDEXED
15/5

S. E. IV circle 10th S
Approved

DEPUTY
AUG 96
Clerk

273

Nos. 278, 278A, REVENUE, 22ND JUNE 1896.

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

READ—again the following G.O., Mis. No. 3720, Rev., dated 22nd September 1894 :—

Read—demi-official letter from H. BEAUCHAMP, Esq., Madras, to the Chief Secretary to Government, dated 13th September 1894, No. 546, bringing to notice the necessity for making Ootacamund a meteorological recording station.

Endorsement No. 1909.

Transferred to the Revenue Department.

OOTACAMUND,
20th September 1894.

(Signed) W. FRANCIS,
Ag. Assistant Secretary.

Order—Mis. No. 3720, Revenue, dated 22nd September 1894.

Referred to the Board of Revenue (Revenue Settlement), and the Meteorological Reporter to the Government of Madras for remarks.

(True Extract.)

(Signed) E. GIBSON,
Secretary to Government.

To the Board of Revenue (Revenue Settlement,
Land Records and Agriculture).
,, the Meteorological Reporter to the Government of Madras.

READ—again the following G.O., Routine No. 2092, Rev., dated 25th October 1894 :—

Read—demi-official letter from H. BEAUCHAMP, Esq., Madras, to the Chief Secretary to Government, dated 25th September 1894, No. 580, about establishing a meteorological recording station at Ootacamund.

Endorsement No. 1894.

Transferred to the Revenue Department.

OOTACAMUND,
2nd October 1894.

(Signed) W. FRANCIS,
Ag. Assistant Secretary.

Order—Routine No. 2092, Revenue, dated 25th October 1894.

Ordered to lie over pending receipt of reply to G.O., Mis. No. 3720, dated 22nd September 1894.

(True Exract.)

(Signed) E. GIBSON,
Secretary to Government.

Read—again the following G.O., Mis. No. 4465, Revenue, dated 17th November 1894:—

Read—the following Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), Mis. No. 6522, dated 25th October 1894:—

Read—G.O., Mis. No. 3720, Revenue, dated 22nd September 1894.

Read—Board's reference thereon, dated 5th October 1894, requesting the Meteorological Reporter to the Government of Madras to favour the Board with her opinion on the question.

Read—the following letter from the Meteorological Reporter to the Government of Madras, dated 11th October 1894, No. 1054:—

In reply to Board's General Register No. 1029, dated 5th October 1894, I have the honour to inform you that considering the importance of Ootacamund as the seat of Government, I have long been strongly in favour of the establishment of a Meteorological Observatory at that station, and even suggested it to the Meteorological Reporter to the Government of India for favourable consideration many years ago. A thermometer shed and most of the instruments are still at Kotagiri and on sanction being obtained I could easily go up to Ootacamund, select a site and start the work in question by the 1st of January 1895. I have referred the matter to the * Meteorological Reporter to the Government of India for his remarks and will communicate his reply to you on receipt.

* Copy of the letter enclosed.

Enclosure.

From MISS E. ISIS POGSON, F.R. Met. Soc., Meteorological Reporter to the Government of Madras, to the Meteorological Reporter to the Government of India, dated 7th October 1894, No. 1053.

In forwarding herewith G.O., Mis. No. 3720, Revenue, dated 22nd September 1894, for favour of perusal and return, I have the honour to request that you will kindly give the matter your consideration. Should it meet with your approval, I shall be much obliged by your kindly taking steps towards obtaining the necessary sanction for establishing the observatory, the cost of the extra telegram, &c. As Ootacamund is the seat of Government for half the year, I have frequently had similar verbal requests and a hill station of much importance should in my opinion be favoured with a meteorological observatory. If you are agreeable to the proposal, I shall be much obliged by your furnishing me with instructions as to (1) by whom the cost of maintaining the observatory should be borne, the Madras Government or the Imperial; (2) the class of observatory to be established; and (3) whether you will kindly obtain sanction of the Imperial Government, if the charge is to be met by that Government. In the event of an observatory being sanctioned, I shall be very pleased to go up and select a site, superintend the erection of the shed and instruments and start the work similarly to the Kotagiri observatory. Indeed the same thermometer shed and thermometers might be utilized, under which circumstance it would perhaps be advisable to retain them there until this question is settled.

Resolution—Mis. No. 6522, dated 25th October 1894.

Miss Pogson's letter will be submitted for the information of Government, with reference to G.O., Mis. No. 3720, dated 22nd September 1894, with the suggestion that the opinion of the Meteorological Reporter to the Government of India be awaited.

2. The main questions to be decided appear to be how far the establishment of an observatory at Ootacamund would be serviceable in facilitating the study of the meteorology of Southern India generally, and what the cost of maintaining an observatory there would be. Miss Pogson will be requested to report fully on these points.

(True Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

To the Secretary to Government, Revenue Department.
„ Meteorological Reporter to the Government of Madras.

Order—Mis. No. 4465, Revenue, dated 17th November 1894.

Recorded pending further report.

(True Extract.)

(Signed) E. GIBSON,
Secretary to Government.

To the Board of Revenue (Revenue Settlement, Land Records and Agriculture).

Read—again the following G.O., Mis. No. 5068, Revenue, dated 16th December 1895:—

Read—the following Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), Mis. No. 6558, dated 29th November 1895:—

Read—the following letter from the Meteorological Reporter to the Government of Madras, to the Secretary to the Commissioner of Revenue Settlement, Land Records and Agriculture, dated 24th November 1895, No. 1269:—

With reference to Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), Mis. No. 6522, dated 25th October 1894, and subsequent reminders, I have the honour to report as follows.

As Ootacamund is the chief sanitarium of Southern India and the seat of Government for nearly six months in the year, the permanent establishment of a meteorological observatory, with a view to obtaining reliable data, from which the average condition of its climate may be obtained, is, in my opinion, a matter of vast importance, and will eventually prove of great utility in improving our knowledge of the climate as a health resort. Our present climatic information regarding Ootacamund is, I believe, based upon results obtained during the temporary existence of a meteorological observatory of about thirteen months' duration, far too short a period for correct averages to be obtained, and although an observatory has been working at the military station of Wellington, which is about 1,000 feet below Ootacamund since 1869, as Mr. Beauchamp remarks, the different situations and boundaries of these two hill stations

render them liable to considerable climatic differences. The addition of a daily set of observations taken at Ootacamund and included in the Madras Daily Weather Report would, I believe, be very acceptable to the general public.

The cost of the observatory would depend upon the class and object of its establishment. If intended for the purpose of obtaining reliable averages, it would be desirable to make it a station of the second class, recording observations three times a day at 8 and 10 A.M., and 4 P.M.; but if the results are only required for insertion in the "Daily Weather Report" and chart, a station of the third class would suffice. The probable cost of a thermometer shed of the usual pattern would be about Rs. 175, excluding its carriage to Ootacamund and erection, which might be estimated at about Rs. 100.

A complete set of properly compared meteorological instruments would be obtainable from the Imperial Meteorological office, Calcutta, and no doubt the Meteorological Reporter to the Government of India would make all the necessary arrangements with the Director-General of Telegraphs regarding the daily submission of a daily weather message for incorporation in the Madras Daily Weather Report similarly to the 37 now received, on a direct application from the Madras Government.

The salary of an observer would also depend upon the class of the observatory as, if his whole time has to be given to meteorological duties, he would probably require about Rs. 40 per mensem, but if the station is one of third class, then the services of some one employed in the Telegraph and Postal office or the dispensary might be utilised at about Rs. 15 or Rs. 20 per mensem.

The initial cost of the thermometer shed, erection and travelling expenses might be roughly estimated at Rs. 500 and the annual cost at about Rs. 500 for a clerk and shed repairs, if of the second, or of about Rs. 260, if of the third class.

As stated in my letter No. 1054, dated 11th October 1894, I referred the matter of the establishment of a meteorological observatory at Ootacamund to the Meteorological Reporter to the Government of India for his advice and remarks, which, however, he reserved, pending the receipt of a similar request from the Madras Government. As all arrangements, supplies of instruments, &c., for the Madras Presidency Meteorological Department are made by the Meteorological Reporter to the Government of India, I beg to suggest that the whole question of the establishment of an observatory at Ootacamund may be referred to that officer for the favour of his opinion, advice and necessary action and assistance.

Resolution—Mis. No. 6558, dated 29th November 1895.

Miss Pogson's letter will be submitted for the information of Government, in continuation of Board's Proceedings, No. 4923, dated 17th September 1895.

2. It will also be communicated with a copy of Board's Proceedings, dated 25th October 1894, No. 6522, to the Meteorological Reporter to the Government of India, with a request that he will be so good as to favour the Board with a statement of his opinion in the matter, for submission to Government.

3. It is observed that Miss Pogson does not appear to place any particular value on a meteorological station at Ootacamund for the study of the meteorology of Southern India generally, but considers one desirable for purely local purposes.

(True Copy and Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

To the Secretary to Government, Revenue Department.
,, the Meteorological Reporter to the Government of India,
with copy of Board's Proceedings, No. 6522,
dated 25th October 1894.

Copy to the Meteorological Reporter to the Government of Madras.

Order—Mis. No. 5068, Revenue, dated 16th December 1895.

Recorded pending further report.

(True Extract.)

(Signed) E. GIBSON,
Secretary to Government.

To the Board of Revenue (Revenue Settlement).

Read—again the following G.O., Mis. No. 735, Rev., dated 20th February 1896:—

Read—the following Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), Mis. No. 641, dated 5th February 1896:—

Read—the following letter from J. ELIOT, Esq., Meteorological Reporter to the Government of India, to the Secretary to the Board of Revenue (Revenue Settlement, &c.), dated 21st January 1896, No. 230:—

I have the honour to acknowledge the receipt of the Proceedings of the Board of Revenue, Mis. No. 6558, dated 29th November 1895, and of the request in the concluding resolution that I would favour the Board with a statement of my opinion with respect to the advisability of establishing a meteorological observatory at Ootacamund.

As stated in the Proceedings there are two standpoints from which the matter may be considered. The first is that of its value for supplying weather information of special interest to the Madras Government and public. It is not necessary for me to discuss this as it appears to be admitted by Mr. Beauchamp, representing the public, and Miss Pogson, the adviser of the Government of Madras in local meteorological matters, that it would be desirable that an observatory of the third class at a cost of Rs. 10 per month or perhaps of a higher class should be established at Ootacamund.

The second standpoint is the value of an observatory at Ootacamund for general scientific purposes, more especially for the study of the meteorology of Southern India.

An observatory at Ootacamund would, so far as I can judge, be of little use for these objects, as it is more or less situated in a valley, and mountain observatories to be of much value for scientific purposes should be, if possible, placed on the summits of ridges and thus record the weather changes in the open so far as possible, so as to give data which will represent fairly exactly the pressure and winds at their general elevation, and, to a somewhat less extent, the humidity and temperature conditions at that elevation.

On the other hand, if it were possible to establish an observatory at a suitable situation at Ootacamund, with a branch observatory on the top of the Dodabetta Peak, the observations of these two stations combined with those of Coimbatore would probably throw much light upon the meteorology of Southern India, more especially during the south-west monsoon period and be of special value.

An observatory was maintained on the Dodabetta Peak for some time by East India Company, and the observations were subsequently discussed by Colonel Sykes. I have no information as to why it was abolished, but the expense was probably considered too great. The observations refer, so far as I remember, to a short period including the year 1840. The observations were discussed some time ago by Dr. J. Hann, Director of the Austrian Meteorological Department, and one of the leading European meteorologists. He found them of considerable value in the discussion of certain important features of the meteorology of India, and he has recently urged in various ways the re-establishment of an observatory on the Dodabetta Peak, and has written to me more than once on the subject. He urges that the observations of an observatory on the Dodabetta Peak would be of great value, as there are accurate data for a large number of plain stations within comparatively short distances from the Nilgiris.

It would perhaps be possible to have simple self-registering instruments at this observatory on the Dodabetta Peak, so that it would not be necessary for an observer to live at the top of the peak, but only to visit it, say, at intervals of two or three days, to see that the instruments were working properly and to make any necessary changes and adjustments. If this could be carried out the expense of maintaining an observatory on the Dodabetta Peak would probably be small in amount.

If the Government of Madras should, on the light of this information, wish to assist in the establishment of the observatory at Ootacamund with a branch observatory on the Dodabetta Peak and be willing to contribute a portion of its cost, it is possible that the Government of India might sanction the establishment of the double observatory. I have hence, in view of this contingency, recently visited Ootacamund and the Dodabetta Peak in order to submit, if required, a detailed scheme for the establishment of the double observatory.

Resolution—Mis. No. 641, dated 5th February 1896.

Mr. Eliot's letter will be submitted for the information of Government, with reference to G.O., Mis. No. 5068, dated 16th December 1895.

2. It will be observed that the Meteorological Reporter attaches a good deal of importance to the establishment of a meteorological station at Ootacamund, provided a branch station be also established on the top of Dodabetta. In these circumstances, the Board recommends that Mr. Eliot be requested to formulate a detailed scheme for the proposed double observatory, with an estimate of its cost.

(True Copy and Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

To the Secretary to Government, Revenue Department.

Order—Mis. No. 735, Revenue, dated 20th February 1896.

The Meteorological Reporter to the Government of India will be requested to favour this Government with a detailed scheme for the proposed double observatory at Ootacamund with an estimate of its cost.

(True Extract.)

(Signed) E. GIBSON,
Secretary to Government.

To the Meteorological Reporter to the Government of India.
„ the Board of Revenue (Revenue Settlement).
Copy to the Meteorological Reporter to the Government of Madras.

Read—also the following letter from J. ELIOT, Esq., Meteorological Reporter to the Government of India, to the Secretary to the Government of Madras, Revenue Department, dated Simla, the 25th May 1896, No. 360-S.:—

I have the honour to acknowledge the receipt of the order of the Government of Madras, Mis. No. 735, dated 20th February 1896, requesting me to favour that Government with a detailed scheme for the proposed double observatories at Ootacamund, with an estimate of its cost.

The observatory at Ootacamund should be placed in a central and open site fairly representative of the general climatic conditions of the station. It should hence not be located in the lowest part of the station near the lake. The best site, so far as I could ascertain during a brief visit to Ootacamund, would be the largest flat open space near the public offices (the Post, Telegraph, &c., and the library). The site is very open and representative, I imagine, of the general conditions at Ootacamund

and there is ample space for the location of the shed so that it may be fully exposed to the prevailing winds. The shed might be of the ordinary Madras pattern and would in that case probably not cost more than Rs. 150. The barometer might be located in a room of the public offices or perhaps in the library, and the wind vane on one of the buildings. I do not think it would be necessary to provide for an anemometer as I doubt whether any useful purpose would be served by the registration of the valley winds at Ootacamund.

With respect to Dodabetta, the observatory building should be on the site of the old observatory which is still clearly marked by the accumulation of bricks and debris. It would be necessary to build a room of moderate size to accommodate the recording barometer and anemograph and a stony ladder leading to the roof. There should also be ample space for table, chair, almirah, and also sleeping space for the observer in case he should be detained by heavy rain when on a visit to the observatory. The roof should be very strong, and on it should be placed a small louvred wooden shed to contain the thermometers. The anemograph might be placed on the top of the shed and access given to it by a ladder. I think it would be possible to construct the building required for a comparatively small amount, say, Rs. 2,500. It would perhaps be best if I were authorised by the Government of Madras to consult with the Executive Engineer, Ootacamund, and describe fully what I require and obtain plans and estimates from him.

If this building were provided, I would arrange to supply it with—

(1) self-recording barograph,
(2) do. thermograph including wet and dry bulb,
(3) do. Beckley's anemograph,

and an ordinary barometer and thermometer for comparing and testing occasionally the accuracy of the self-registering instruments.

The observatory at Ootacamund should, I think, be second class, recording eye observations at 8, 10 and 16 hours. The work of observations at Dodabetta will be performed by self-registering instruments, but it will be necessary to visit it every second day at least in order that the papers on which the traces of the autographic instruments are recorded should be changed. It would be advisable that it should be visited every day except in very stormy weather. It would hence be necessary to provide an intelligent whole-time observer, and also a peon who could be taught to keep the instruments clean, change the papers, wind up the clocks. And so far as I am able to judge of the rates of pay in Southern India, it would be possible to secure an observer of the stamp required if the pay were paid at Rs. 30 rising to Rs. 40. The peon should, I think, receive Rs. 12 rising to Rs. 18. It is, I think, most desirable that their pay should be graded in order to offer some inducement for lengthened service and thus avoid undesirable changes. It would also give the observer and peon an interest in the proper performance of their work as the grant of each increment would depend upon the proper execution of their duties during the previous year.

The following is a statement of the cost of establishing and maintaining the double observatory :—

		Rs.
First initial cost—		
Shed at Ootacamund		150
Building at Dodabetta		2,500
	Total ...	2,650
Second annual cost of maintenance—		
Observer on	Rs. 30 to 40	450
Peon on	„ 12 to 18	198
	Total ...	648

An important question for the consideration of the Government of Madras if they consult the Government of India in the matter is whether they are prepared to pay the whole cost of the establishment and maintenance of the observatory, and, if not, what proportion of the initial and annual cost they are prepared to undertake.

Order—No. 278, Revenue, dated 22nd June 1896.

Miscellaneous.

His Excellency the Governor in Council concurs in the opinion of the Meteorological Reporter to the Government of India, that an observatory at Ootacamund with a branch on the top of the Dodabetta Peak will be of much value in connection with the meteorology of Southern India and approves generally his scheme for the establishment and maintenance of such a double observatory.

2. The Meteorological Reporter to the Government of India will accordingly be requested to submit, in consultation with the Executive Engineer, Coimbatore division, plans and estimates for the required buildings and to furnish an estimate of the cost of providing and setting up the necessary instruments.

3. On receipt of full information as to the initial and annual cost of the establishment and maintenance of the proposed observatory, the Government of India will be addressed. In the meanwhile a copy of these proceedings and of the correspondence which has led thereto will be forwarded for the information of that Government.

(True Extract.)

A. Arundel
Ag. Secretary to Government.

To the Meteorological Reporter to the Government of India.
" " " Madras.
" the Board of Revenue (Revenue Settlement, &c.).
" the Public Works Department.

Endorsement No. 278A.

Copy to the Government of India, Revenue and Agricultural Department.

(Signed) A. T. ARUNDEL,
Ag. Secretary to Government.

Exd. S. J. Pereira.

100 Copies.

Govt. of {1896} Madras.

REVENUE.

Order thereon
No: 2301 W. d/ 11 August 96
Communicated
to the Superintending
Engineer IV circle.
(True Extract)
(sd) D. McN. C.
Under Secretary.

Issued

Read. Encl.

G.O., Nos. 278, 278A,
22nd June 1896.

JUNE.

Observatory.

Concurring in the opinion of the Meteorological Reporter to the Government of India that an — at Ootacamund with a branch on the top of the Dodabetta Peak will be of much value in connection with the meteorology of Southern India and approving generally his scheme for the establishment and maintenance of such a double observatory.

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(Signed) A. T. ARUNDEL,
Ag. Secretary to Government.

To the Meteorological Reporter to the Government of India.
" " " Madras.
" the Board of Revenue (Revenue Settlement, &c.).
" the Public Works Department.

Endorsement No. 278A.

Copy to the Government of India, Revenue and Agricultural Department.

(Signed) A. T. ARUNDEL,
Ag. Secretary to Government.

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(True Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

To the Secretary to Government, Revenue Department.
„ Meteorological Reporter to the Government of Madras.

Order—Mis. No. 4465, Revenue, dated 17th November 1894.

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Read—the following letter from the Meteorological Reporter to the Government of Madras, to the Secretary to the Commissioner of Revenue Settlement, Land Records and Agriculture, dated 24th November 1895, No. 1269 :—

With reference to Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), Mis. No. 6522, dated 25th October 1894, and subsequent reminders, I have the honour to report as follows.

As Ootacamund is the chief sanitarium of Southern India and the seat of Government for nearly six months in the year, the permanent establishment of a meteorological observatory, with a view to obtaining reliable data, from which the average condition of its climate may be obtained, is, in my opinion, a matter of vast importance, and will eventually prove of great utility in improving our knowledge of the climate as a health resort. Our present climatic information regarding Ootacamund is, I believe, based upon results obtained during the temporary existence of a meteorological observatory of about thirteen months' duration, far too short a period for correct averages to be obtained, and although an observatory has been working at the military station of Wellington, which is about 1,000 feet below Ootacamund since 1869, as Mr. Beauchamp remarks, the different situations and boundaries of these two hill stations

render them liable to considerable climatic differences. The addition of a daily set of observations taken at Ootacamund and included in the Madras Daily Weather Report would, I believe, be very acceptable to the general public.

The cost of the observatory would depend upon the class and object of its establishment. If intended for the purpose of obtaining reliable averages, it would be desirable to make it a station of the second class, recording observations three times a day at 8 and 10 A.M., and 4 P.M.; but if the results are only required for insertion in the "Daily Weather Report" and chart, a station of the third class would suffice. The probable cost of a thermometer shed of the usual pattern would be about Rs. 175, excluding its carriage to Ootacamund and erection, which might be estimated at about Rs. 100.

A complete set of properly compared meteorological instruments would be obtainable from the Imperial Meteorological office, Calcutta, and no doubt the Meteorological Reporter to the Government of India would make all the necessary arrangements with the Director-General of Telegraphs regarding the daily submission of a daily weather message for incorporation in the Madras Daily Weather Report similarly to the 37 now received, on a direct application from the Madras Government.

The salary of an observer would also depend upon the class of the observatory as, if his whole time has to be given to meteorological duties, he would probably require about Rs. 40 per mensem, but if the station is one of third class, then the services of some one employed in the Telegraph and Postal office or the dispensary might be utilised at about Rs. 15 or Rs. 20 per mensem.

The initial cost of the thermometer shed, erection and travelling expenses might be roughly estimated at Rs. 500 and the annual cost at about Rs. 500 for a clerk and shed repairs, if of the second, or of about Rs. 260, if of the third class.

As stated in my letter No. 1054, dated 11th October 1894, I referred the matter of the establishment of a meteorological observatory at Ootacamund to the Meteorological Reporter to the Government of India for his advice and remarks, which, however, he reserved, pending the receipt of a similar request from the Madras Government. As all arrangements, supplies of instruments, &c., for the Madras Presidency Meteorological Department are made by the Meteorological Reporter to the Government of India, I beg to suggest that the whole question of the establishment of an observatory at Ootacamund may be referred to that officer for the favour of his opinion, advice and necessary action and assistance.

Resolution—Mis. No. 6558, dated 29th November 1895.

Miss Pogson's letter will be submitted for the information of Government, in continuation of Board's Proceedings, No. 4923, dated 17th September 1895.

2. It will also be communicated with a copy of Board's Proceedings, dated 25th October 1894, No. 6522, to the Meteorological Reporter to the Government of India, with a request that he will be so good as to favour the Board with a statement of his opinion in the matter, for submission to Government.

3. It is observed that Miss Pogson does not appear to place any particular value on a meteorological station at Ootacamund for the study of the meteorology of Southern India generally, but considers one desirable for purely local purposes.

(True Copy and Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

To the Secretary to Government, Revenue Department.
„ the Meteorological Reporter to the Government of India,
with copy of Board's Proceedings, No. 6522,
dated 25th October 1894.

Copy to the Meteorological Reporter to the Government of Madras.

Order—Mis. No. 5068, Revenue, dated 16th December 1895.

Recorded pending further report.

(True Extract.)

(Signed) E. GIBSON,
Secretary to Government.

To the Board of Revenue (Revenue Settlement).

Read—again the following G.O., Mis. No. 735, Rev., dated 20th February 1896:—

Read—the following Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), Mis. No. 641, dated 5th February 1896:—

Read—the following letter from J. ELIOT, Esq., Meteorological Reporter to the Government of India, to the Secretary to the Board of Revenue (Revenue Settlement, &c.), dated 21st January 1896, No. 230:—

I have the honour to acknowledge the receipt of the Proceedings of the Board of Revenue, Mis. No. 6558, dated 29th November 1895, and of the request in the concluding resolution that I would favour the Board with a statement of my opinion with respect to the advisability of establishing a meteorological observatory at Ootacamund.

As stated in the Proceedings there are two standpoints from which the matter may be considered. The first is that of its value for supplying weather information of special interest to the Madras Government and public. It is not necessary for me to discuss this as it appears to be admitted by Mr. Beauchamp, representing the public, and Miss Pogson, the adviser of the Government of Madras in local meteorological matters, that it would be desirable that an observatory of the third class at a cost of Rs. 10 per month or perhaps of a higher class should be established at Ootacamund.

The second standpoint is the value of an observatory at Ootacamund for general scientific purposes, more especially for the study of the meteorology of Southern India.

An observatory at Ootacamund would, so far as I can judge, be of little use for these objects, as it is more or less situated in a valley, and mountain observatories to be of much value for scientific purposes should be, if possible, placed on the summits of ridges and thus record the weather changes in the open so far as possible, so as to give data which will represent fairly exactly the pressure and winds at their general elevation, and, to a somewhat less extent, the humidity and temperature conditions at that elevation.

On the other hand, if it were possible to establish an observatory at a suitable situation at Ootacamund, with a branch observatory on the top of the Dodabetta Peak, the observations of these two stations combined with those of Coimbatore would probably throw much light upon the meteorology of Southern India, more especially during the south-west monsoon period and be of special value.

An observatory was maintained on the Dodabetta Peak for some time by East India Company, and the observations were subsequently discussed by Colonel Sykes. I have no information as to why it was abolished, but the expense was probably considered too great. The observations refer, so far as I remember, to a short period including the year 1840. The observations were discussed some time ago by Dr. J. Hann, Director of the Austrian Meteorological Department, and one of the leading European meteorologists. He found them of considerable value in the discussion of certain important features of the meteorology of India, and he has recently urged in various ways the re-establishment of an observatory on the Dodabetta Peak, and has written to me more than once on the subject. He urges that the observations of an observatory on the Dodabetta Peak would be of great value, as there are accurate data for a large number of plain stations within comparatively short distances from the Nilgiris.

It would perhaps be possible to have simple self-registering instruments at this observatory on the Dodabetta Peak, so that it would not be necessary for an observer to live at the top of the peak, but only to visit it, say, at intervals of two or three days, to see that the instruments were working properly and to make any necessary changes and adjustments. If this could be carried out the expense of maintaining an observatory on the Dodabetta Peak would probably be small in amount.

If the Government of Madras should, on the light of this information, wish to assist in the establishment of the observatory at Ootacamund with a branch observatory on the Dodabetta Peak and be willing to contribute a portion of its cost, it is possible that the Government of India might sanction the establishment of the double observatory. I have hence, in view of this contingency, recently visited Ootacamund and the Dodabetta Peak in order to submit, if required, a detailed scheme for the establishment of the double observatory.

Resolution—Mis. No. 641, dated 5th February 1896.

Mr. Eliot's letter will be submitted for the information of Government, with reference to G.O., Mis. No. 5068, dated 16th December 1895.

2. It will be observed that the Meteorological Reporter attaches a good deal of importance to the establishment of a meteorological station at Ootacamund, provided a branch station be also established on the top of Dodabetta. In these circumstances, the Board recommends that Mr. Eliot be requested to formulate a detailed scheme for the proposed double observatory, with an estimate of its cost.

(True Copy and Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

To the Secretary to Government, Revenue Department.

Order—Mis. No. 735, Revenue, dated 20th February 1896.

The Meteorological Reporter to the Government of India will be requested to favour this Government with a detailed scheme for the proposed double observatory at Ootacamund with an estimate of its cost.

(True Extract.)

(Signed) E. GIBSON,
Secretary to Government.

To the Meteorological Reporter to the Government of India.
" the Board of Revenue (Revenue Settlement).
Copy to the Meteorological Reporter to the Government of Madras.

Read—also the following letter from J. ELIOT, Esq., Meteorological Reporter to the Government of India, to the Secretary to the Government of Madras, Revenue Department, dated Simla, the 25th May 1896, No. 360-S. :—

I have the honour to acknowledge the receipt of the order of the Government of Madras, Mis. No. 735, dated 20th February 1896, requesting me to favour that Government with a detailed scheme for the proposed double observatories at Ootacamund, with an estimate of its cost.

The observatory at Ootacamund should be placed in a central and open site fairly representative of the general climatic conditions of the station. It should hence not be located in the lowest part of the station near the lake. The best site, so far as I could ascertain during a brief visit to Ootacamund, would be the largest flat open space near the public offices (the Post, Telegraph, &c., and the library). The site is very open and representative, I imagine, of the general conditions at Ootacamund

and there is ample space for the location of the shed so that it may be fully exposed to the prevailing winds. The shed might be of the ordinary Madras pattern and would in that case probably not cost more than Rs. 150. The barometer might be located in a room of the public offices or perhaps in the library, and the wind vane on one of the buildings. I do not think it would be necessary to provide for an anemometer as I doubt whether any useful purpose would be served by the registration of the valley winds at Ootacamund.

With respect to Dodabetta, the observatory building should be on the site of the old observatory which is still clearly marked by the accumulation of bricks and debris. It would be necessary to build a room of moderate size to accommodate the recording barometer and anemograph and a stony ladder leading to the roof. There should also be ample space for table, chair, almirah, and also sleeping space for the observer in case he should be detained by heavy rain when on a visit to the observatory. The roof should be very strong, and on it should be placed a small louvred wooden shed to contain the thermometers. The anemograph might be placed on the top of the shed and access given to it by a ladder. I think it would be possible to construct the building required for a comparatively small amount, say, Rs. 2,500. It would perhaps be best if I were authorised by the Government of Madras to consult with the Executive Engineer, Ootacamund, and describe fully what I require and obtain plans and estimates from him.

If this building were provided, I would arrange to supply it with—

(1) self-recording barograph,
(2) do. thermograph including wet and dry bulb,
(3) do. Beckley's anemograph,

and an ordinary barometer and thermometer for comparing and testing occasionally the accuracy of the self-registering instruments.

The observatory at Ootacamund should, I think, be second class, recording eye observations at 8, 10 and 16 hours. The work of observations at Dodabetta will be performed by self-registering instruments, but it will be necessary to visit it every second day at least in order that the papers on which the traces of the autographic instruments are recorded should be changed. It would be advisable that it should be visited every day except in very stormy weather. It would hence be necessary to provide an intelligent whole-time observer, and also a peon who could be taught to keep the instruments clean, change the papers, wind up the clocks. And so far as I am able to judge of the rates of pay in Southern India, it would be possible to secure an observer of the stamp required if the pay were paid at Rs. 30 rising to Rs. 40. The peon should, I think, receive Rs. 12 rising to Rs. 18. It is, I think, most desirable that their pay should be graded in order to offer some inducement for lengthened service and thus avoid undesirable changes. It would also give the observer and peon an interest in the proper performance of their work as the grant of each increment would depend upon the proper execution of their duties during the previous year.

The following is a statement of the cost of establishing and maintaining the double observatory :—

		Rs.
First initial cost—		
Shed at Ootacamund		150
Building at Dodabetta		2,500
	Total ...	2,650
Second annual cost of maintenance—		
Observer on	Rs. 30 to 40	450
Peon on	,, 12 to 18	198
	Total ...	648

An important question for the consideration of the Government of Madras if they consult the Government of India in the matter is whether they are prepared to pay the whole cost of the establishment and maintenance of the observatory, and, if not, what proportion of the initial and annual cost they are prepared to undertake.

Order—No. 278, Revenue, dated 22nd June 1896.

Miscellaneous.

His Excellency the Governor in Council concurs in the opinion of the Meteorological Reporter to the Government of India, that an observatory at Ootacamund with a branch on the top of the Dodabetta Peak will be of much value in connection with the meteorology of Southern India and approves generally his scheme for the establishment and maintenance of such a double observatory.

2. The Meteorological Reporter to the Government of India will accordingly be requested to submit, in consultation with the Executive Engineer, Coimbatore division, plans and estimates for the required buildings and to furnish an estimate of the cost of providing and setting up the necessary instruments.

3. On receipt of full information as to the initial and annual cost of the establishment and maintenance of the proposed observatory, the Government of India will be addressed. In the meanwhile a copy of these proceedings and of the correspondence which has led thereto will be forwarded for the information of that Government.

(True Extract.)

(Signed) A. T. ARUNDEL,
Ag. Secretary to Government.

To the Meteorological Reporter to the Government of India.
" " " Madras.
" the Board of Revenue (Revenue Settlement, &c.).
" the Public Works Department.

Endorsement No. 278A.

Copy to the Government of India, Revenue and Agricultural Department.

(Signed) A. T. ARUNDEL,
Ag. Secretary to Government.

Exd. S. J. Pereira.

100 Copies.