

REVENUE

MS Co No 81 REVE 5-1-1899

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FILE No. 60.

SERIAL No. 2.

1898.

GOVERNMENT OF INDIA:

DEPARTMENT OF REVENUE AND AGRICULTURE.

METEOROLOGY.

C No. 8603

RESOLUTION.

No. 27-60-2.

Dated Calcutta, the 8th December 1898.

81
5-1-99

Extract from the Proceedings of the Government of India, Department of Revenue and Agriculture, No. 27—60-2, dated Simla, the 8th December 1898.

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RESOLUTION.

The number of departmental observatories working during the year was 174 or one more than in the previous year. Observations were regularly received from the Seychelles Islands and arrangements were made for the despatch of a daily telegram from that station from the beginning of May to the 27th July 1897, to give early information as to the advent and progress of the south-west monsoon. An observatory at Car-Nicobar in the Nicobar Islands was opened on the 10th May 1897, and should prove a valuable addition to the system in providing accurate data for a part of the Bay for which but scanty information is at present available. The observatory at Minicoy which was closed in 1896 was re-opened on the 16th June 1897. Six non-departmental observatories working in co-operation with the Department were established during the year. Observatories were also opened at Kotah and Udaipore. The observatory at Para-Chinar, opened on the 15th June 1897, is a valuable addition to the system and gives data for a large frontier district of the Punjab which was previously outside the area of observation. The Kashmir State has opened an observatory at Gulmarg and arrangements have been made to take hourly observations on four days in each month at the Srinagar Observatory, which should give valuable results. During the year under review the observatories at Salona (Assam), Mardan (Punjab), Rajahmundry (Madras), and Khamamet (Hyderabad-Deccan), were closed. The circumstances under which the observatory at Salona was established were stated in the review of the report for 1896-97. Owing to serious illness Mr. Wilfred Fleet, the founder of the observatory, left the country, and in the absence of any one able or willing to take it up the work of observation was discontinued. The discontinuance of these observations which were throwing much light on the meteorology of the central Assam valley is much to be regretted, more especially as the difficulties in the way of securing accurate and continuous records by means of volunteer observers, to which the Meteorological Reporter refers, had in this case been successfully surmounted. The Dehra Forest School Observatory was closed during the year at the instance of the Forest Department, as the observations recorded here were the same in kind and extent as are recorded in the neighbouring observatory attached to the Survey of India Office.

2. Observations were received from Teheran and Ispahan, and temperature and wind observations from seven stations on the Persian section of the Indo-European Telegraph line. The Government of India are much indebted to the Directors of the Indo-European telegraph line for the telegrams transmitted free of cost from Bushire, Jask, Ispahan and Teheran which were of great use in forecasting the approach of cold weather storms from Persia to Northern India. Directors of the various sections of the line for the assistance afforded

Daily weather telegrams were received as in

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the preceding five years. Special observations of thunderstorms and of lightning were taken at ten stations during the year and special hot wind observations at twelve stations on the 17th April 1897.

6. Serial observations of the meteorological phenomena accompanying the occurrence of the total solar eclipse of the 22nd January 1898 were taken by one hundred and fifty-eight observers. Full instructions were issued by the Meteorological Reporter and appear to have been carefully and intelligently carried out by the observers. The results have been tabulated and reduced, and it is proposed to publish them *in extenso* during the present year.

7. The great majority of the reports of earthquake shocks received during the year gave details of the earthquake shocks of the 12th June 1897. It is hoped to give in future a brief statement in the monthly reviews of the earthquakes of the month as reported by the departmental observers. Proposals have been made by the Seismological Committee of the British Association for the establishment in India and its dependencies of stations for recording of earthquake movements and disturbances. The Government of India have agreed to take part in these important investigations and have made arrangements for the establishment of two seismological observatories (in addition to one already arranged for by the Government of Madras) at Alipore and Colaba. The necessary instruments have been obtained from Europe and will shortly be erected and brought into regular use. The Kashmir State has expressed a wish to join in these observations.

8. The new system of cloud observations and nomenclature which was noticed in the review of the report for 1896-97, was introduced from the 1st January 1898, and observers have apparently experienced no difficulty in adopting it. Observations with photogrameters for obtaining observations from which the average height and the rate and direction of motion of the various kinds of clouds may be estimated were taken during the year at Calcutta and Allahabad. The results of the first series of observations taken at the former station are interesting and encouraging.

9. The work of marine meteorology was carried out during the past year on the same lines as heretofore. The extracts from ships' logs received amounted to 2,297, and 10,099 barometric comparisons were made. The Port Officer at Rangoon has arranged to collect data from the steamers of the Bibby Line, trading between London and Rangoon, and six logs were received from him during the year.

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13. A uniform system of storm signals for the whole of the Indian coast was framed by a Committee consisting of the Meteorological Reporter, the Director of the Indian Marine and the Port Officer, Bombay, and was introduced from the 1st April 1898, and steps have been taken to improve the arrangements for giving warning of storms to the coast ports. Endeavours have been made to obtain the intelligent co-operation of the observers at the coast stations in sending special warning telegrams at any time of the day when the weather is indicative of the approach of cyclonic storms, and the necessary instructions have been issued to such observers. Flood warnings were issued as in previous years to district officers and to officers in the irrigation and other branches of the Public Works Department. A large number of weather telegrams forecasting the weather for forty-eight hours were sent to the expeditions engaged on the North-West Frontier during the year, and the Government of India have received with satisfaction the testimony of officers commanding in the field as to their general accuracy and utility. Weather forecasts were also supplied to indigo planters in Behar, and their value was generally recognised.

14. A new edition of the hand-book of cyclonic storms in the Bay of Bengal will be shortly prepared bringing the work up to date, and embodying the additional information and data relating to storms in the Bay collected since the publication of the work in 1887. A Popular Sailing Directory of the Indian seas has been prepared, and arrangements are being made for its publication. The Meteorological Reporter hopes to publish during the year a discussion of the Trevandrum observations, which have already been published in two volumes.

15. The Meteorological Department received valuable assistance in its work from the Survey, Telegraph and Postal Departments. The Telegraph Department continued to assist the Department in the rapid transmission of storm and flood-warning telegrams during the year, and by permission of the Postal Department meteorological observatories have been established in connection with combined Postal and Telegraph offices at fifteen stations.

18. It only remains for the Government of India to acknowledge the excellence of the work of the Department during the year, the indefatigable supervision of the Meteorological Reporter over all branches of the work and the value of his labours as well as those of his Assistants and the Provincial Reporters. Thanks are also due to all those who, though not members of the Department, have assisted in the work.

Order.—Ordered that the foregoing Resolution be forwarded to the several Departments of the Government of India, to Local Governments and Administrations, to the Director General, Indian Medical Service, to the Surveyor General of India, and to the Meteorological Reporter to the Government of India.

Ordered also that it be published in the supplement to the *Gazette of India*.

[True Extract.]

T. W. HOLDERNESS,

Secretary to the Government of India.

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13. A uniform system of storm signals for the whole of the Indian coast was framed by a Committee consisting of the Meteorological Reporter, the Director of the Indian Marine and the Port Officer, Bombay, and was introduced from the 1st April 1898, and steps have been taken to improve the arrangements for giving warning of storms to the coast ports. Endeavours have been made to obtain the intelligent co-operation of the observers at the coast stations in sending special warning telegrams at any time of the day when the weather is indicative of the approach of cyclonic storms, and the necessary instructions have been issued to such observers. Flood warnings were issued as in previous years to district officers and to officers in the irrigation and other branches of the Public Works Department. A large number of weather telegrams forecasting the weather for forty-eight hours were sent to the expeditions engaged on the North-West Frontier during the year, and the Government of India have received with satisfaction the testimony of officers commanding in the field as to their general accuracy and utility. Weather forecasts were also supplied to indigo planters in Behar, and their value was generally recognised.

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T. W. HOLDERNESS,

Secretary to the Government of India.

Revenue (1899) Department.

MISCELLANEOUS SERIES.

G.O., No. 81

DATED 5th January 99

[Despatch Abstract.]

Coms to the Bd of Rev and the Mtl Report to the Govt of Madras Resolution from the Govt of India on the Report on the Administration of the Mtl Dept of the Govt of India for 1897-98.

Department.	Date.	G.O.
FURTHER P		
Department.	Date.	G.

செப்பனிருபவர் பெயர்
செப்பனிருவதற்காக எடுத்த
கொள்ளப்பட்ட நாள் 12/2004
செப்பனிடம் முடிந்த நாள்
மு. டா. ரீ. எ. உதயா என்.
கையொப்பம் கையொப்பம்

Revenue Department

SERIAL No. 2.

1898.

DEPARTMENT OF REVENUE AND AGRICULTURE.

No. 27-60-2

Dated Calcutta, the 8th December 1898.

Rec. $\frac{1}{2}$ } 16/12
Reg. $\frac{1}{2}$ }

Communicated to the Board of
Revenue and the Meteorological
Reporters to the Govt of Madras.

SUBJECT.

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28
2-1-99

17-12-58

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3. Owing to circumstances that were unavoidable the quantity of inspection performed by the officers of the Department during the year was considerably smaller than in 1896-97. The work of the observers was in most instances found to be satisfactory.

4. The prevalence of cloud during the cold weather months prevented any considerable amount of actinometric work being carried out during the year.

5. Owing chiefly to the comparative absence of stormy weather during the year, the number of special observations of storms was slightly smaller than in

the preceding five years. Special observations of thunderstorms and of lightning were taken at ten stations during the year and special hot wind observations at twelve stations on the 17th April 1897.

6. Serial observations of the meteorological phenomena accompanying the occurrence of the total solar eclipse of the 22nd January 1898 were taken by one hundred and fifty-eight observers. Full instructions were issued by the Meteorological Reporter and appear to have been carefully and intelligently carried out by the observers. The results have been tabulated and reduced, and it is proposed to publish them *in extenso* during the present year.

7. The great majority of the reports of earthquake shocks received during the year gave details of the earthquake shocks of the 12th June 1897. It is hoped to give in future a brief statement in the monthly reviews of the earthquakes of the month as reported by the departmental observers. Proposals have been made by the Seismological Committee of the British Association for the establishment in India and its dependencies of stations for recording of earthquake movements and disturbances. The Government of India have agreed to take part in these important investigations and have made arrangements for the establishment of two seismological observatories (in addition to one already arranged for by the Government of Madras) at Alipore and Colaba. The necessary instruments have been obtained from Europe and will shortly be erected and brought into regular use. The Kashmir State has expressed a wish to join in these observations.

8. The new system of cloud observations and nomenclature which was noticed in the review of the report for 1896-97, was introduced from the 1st January 1898, and observers have apparently experienced no difficulty in adopting it. Observations with photogrameters for obtaining observations from which the average height and the rate and direction of motion of the various kinds of clouds may be estimated were taken during the year at Calcutta and Allahabad. The results of the first series of observations taken at the former station are interesting and encouraging.

9. The work of marine meteorology was carried out during the past year on the same lines as heretofore. The extracts from ships' logs received amounted to 2,297, and 10,099 barometric comparisons were made. The Port Officer at Rangoon has arranged to collect data from the steamers of the Bibby Line, trading between London and Rangoon, and six logs were received from him during the year.

10. Fairly complete and satisfactory information of the amount, distribution and time of occurrence of the snowfall in the Himalayan and Afghan mountain areas was received, and was useful in determining the probable effect of the cold weather snowfall in modifying the distribution of the south-west monsoon rainfall of 1898. The acknowledgments of the Government of India are due to the gentlemen who contributed information.

11. No change was made in the system of rainfall registration during the past year. Forty-nine rain-gauge stations were established and thirteen abolished. During the last five years there has been a decided improvement in the work of registration, and the rainfall data are now fairly reliable. The reports of the controlling officers, however, continue to show that in more than one province the work of inspection is very imperfectly carried out and that in many cases the exposure of the rain-gauges, and the registration of the rainfall by observers leave much to be desired. A satisfactory amount of inspection was carried out in Madras, Berar, Bombay, Assam, Burma and the North-Western Provinces and Oudh. The rainfall registration in the Central Provinces was fairly satisfactory, and steps are being taken for its further improvement. In Bengal the inspection was inadequate, and the Government of India desire to draw attention to the necessity for the more frequent and careful inspection of rain-gauges in that province.

12. The forecast of the probable character of the rainfall during the south-west monsoon of 1897 was published as in former years. It was in fair agreement with facts, and the anticipation based on the probability of the cycle terminating during the year was fully verified. The forecast of the winter rains agreed generally with actual conditions in five provinces.

13. A uniform system of storm signals for the whole of the Indian coast was framed by a Committee consisting of the Meteorological Reporter, the Director of the Indian Marine and the Port Officer, Bombay, and was introduced from the 1st April 1898, and steps have been taken to improve the arrangements for giving warning of storms to the coast ports. Endeavours have been made to obtain the intelligent co-operation of the observers at the coast stations in sending special warning telegrams at any time of the day when the weather is indicative of the approach of cyclonic storms, and the necessary instructions have been issued to such observers. Flood warnings were issued as in previous years to district officers and to officers in the irrigation and other branches of the Public Works Department. A large number of weather telegrams forecasting the weather for forty-eight hours were sent to the expeditions engaged on the North-West Frontier during the year, and the Government of India have received with satisfaction the testimony of officers commanding in the field as to their general accuracy and utility. Weather forecasts were also supplied to indigo planters in Behar, and their value was generally recognised.

14. A new edition of the hand-book of cyclonic storms in the Bay of Bengal will be shortly prepared bringing the work up to date, and embodying the additional information and data relating to storms in the Bay collected since the publication of the work in 1887. A Popular Sailing Directory of the Indian seas has been prepared, and arrangements are being made for its publication. The Meteorological Reporter hopes to publish during the year a discussion of the Trevandrum observations, which have already been published in two volumes.

15. The Meteorological Department received valuable assistance in its work from the Survey, Telegraph and Postal Departments. The Telegraph Department continued to assist the Department in the rapid transmission of storm and flood-warning telegrams during the year, and by permission of the Postal Department meteorological observatories have been established in connection with combined Postal and Telegraph offices at fifteen stations.

18. It only remains for the Government of India to acknowledge the excellence of the work of the Department during the year, the indefatigable supervision of the Meteorological Reporter over all branches of the work and the value of his labours as well as those of his Assistants and the Provincial Reporters. Thanks are also due to all those who, though not members of the Department, have assisted in the work.

Order.—Ordered that the foregoing Resolution be forwarded to the several Departments of the Government of India, to Local Governments and Administrations, to the Director General, Indian Medical Service, to the Surveyor General of India, and to the Meteorological Reporter to the Government of India.

Ordered also that it be published in the supplement to the *Gazette of India*.

[True Extract.]

J. M. S. M. S.
Secretary to the Government of India.

To

The Secretary to the Government of Madras.