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MADRAS RECORD OFFICE.

Government of Madras.

Public DEPARTMENT.

G.O. No. 935-36 Press
Mis.

Dated 28-6-1918

Not to be folded or roughly handled

Read the following papers:—

No. 239. From the Government Astronomer and Meteorological Superintendent, to the Acting Chief Secretary to Government, Fort St. George, dated Madras Observatory, 13th May 1871.

Herewith I have the honour to submit a concise account of what has been done in the science of Meteorology in the Madras Presidency up to the present time in compliance with the Proceedings of the Madras Government, Public Department, 18th February 1871. In doing so it will be more convenient to treat the subject under two separate heads, viz., first, Registers, including both Observations and Reductions, and secondly, Publications.

Observations and Reductions.

1. Observations of the barometer and thermometer were commenced at the Madras Observatory in the year 1796; measurements of rainfall date from August 1803. A break of six years occurs, from 1807 to 1812 inclusive, owing to the absence of the Astronomer and the utterly unreliable character of the work nominally carried on meanwhile. Accurate observations were resumed in 1813, and continued until the end of 1821.

2. A fresh series of meteorological observations was commenced in 1822 and continued at the Observatory until 1843, and these appear to have been conducted with great care and a due sense of their importance throughout.

3. A very elaborate and valuable series of hourly observations, agreeably to the plan devised by the Committee of Physics of the Royal Society, was begun in March 1841 in the College compound, about a quarter of a mile distant from the Madras Observatory, with entirely new and superior instruments supplied by the Royal Society for the purpose. Hourly magnetical observations were also included in the new scheme, but with these the present report has nothing to do beyond a mere passing mention of the circumstance. In October 1847 the College Observatory was dismantled and the instruments were removed to the Observatory, the hourly observations being there continued until the 28th February 1861, when, twenty years' complete records having been secured, it was no longer considered necessary to carry on so extensive and laborious a system, involving an expensive and distinct establishment and accumulating so formidable an array of, at that time, only half-reduced available results.

4. The Madras meteorological observations have been since continued with the addition of recent instrumental improvements, the registers being made thrice daily. Measures of the velocity of the wind, an important step in advance of results furnished by the old and comparatively useless and uncertain pressure gauges, date from September 1861, and a fine new anemometer upon the Kew principle was erected in June 1864, which has been furnishing hourly determinations of wind direction, velocity, and rainfall, in addition to the usual records, up to the present time. All these observations are completely reduced and ready for press.

5. A series of hourly observations similar to those at Madras, the instruments being also supplied by the Royal Society, was commenced at Singapore in 1841 and continued until the end of 1845. The reason for referring to these, although not in the Madras Presidency, will appear hereafter.

6. Meteorological and tidal observations were carried on at Cochin from July 1842 to December 1844 under the management of the Honourable Company's

Astronomer at Madras, the records being made four times daily. These exist only in manuscript, and are wholly unreduced.

7. A precisely similar series of six-hourly meteorological and tidal observations was carried on at Penang from March 1843 to August 1845, also under the direction of the Honourable Company's Astronomer, the unreduced manuscripts of which are preserved at the Madras Observatory.

8. A Meteorological Observatory was established at Dodabetta, the highest point of the Nilgherry Hills, in December 1847, at which records were maintained until April 1859. The observations were reduced up to the end of 1855, but those made during subsequent years are still only in manuscript. The records were made twice daily; but the thermometrical results were rendered comparatively useless through the instruments being placed on the inside of a brick building, so that even when snow and ice were about outside a minimum was rarely noted so low as 31° while at a considerably lower altitude, at Ootacamund, it is no uncommon thing for as low a temperature as 20° Fahrenheit to be experienced during the cold season. The mean temperature may be approximately obtainable, but it is certain that such observations cannot give any correct idea of the daily range or of the hygrometrical peculiarities of the station.

9. A Meteorological Register was carried on at Bangalore from January to November 1852 by a trained Assistant from the Madras Observatory under the direction of the Astronomer, but these observations are also unreduced.

10. The new Meteorological Establishment of the Madras Presidency, constituted in 1867, now comprises the following twelve working stations, commencing from the following dates:—

Salem	1st December 1867.	Kurnool	16th April 1868.
Bangalore	1st January 1868.	Trichinopoly	1st July ..
Bellary	1st February ..	Negapatam	16th ..
Coimbatore		Masulipatam	17th August ..
Madura	6th ..	Secunderabad	1st July 1869.
Cochin	16th March ..	Wellington	17th April 1870.

Each of these twelve stations is equipped with a complete set of meteorological instruments of the best modern construction, chiefly by Messrs. Negreth and Zambra, and Mr. Browning of London. Every precaution was taken before issuing these instruments to ensure their strict correspondence with the standards of the Madras Observatory. The observations are recorded by paid observers, mostly natives, who have been previously trained in the Madras Observatory. Each station is under the superintendence of a Medical Officer, whose business it is to see that the observations are punctually and uninterruptedly made, the instruments kept in efficient order, and copies of the register forwarded half-monthly to the Madras Observatory, where up to this time all reductions have been necessarily effected. Owing to a deficiency of hands and other unavoidable causes it was impossible to have the reductions fairly commenced until the year 1870 was far advanced, when it was considered best to prepare first the results of the current year and afterwards those for 1868 and 1869. This has accordingly been done, and future reductions will be kept as nearly up to date as other duties will permit.

Publications.

11. The backward and neglected state of meteorological publications in the Madras Presidency is much to be deplored, but easily to be accounted for. It has

arisen entirely from the circumstance of the Astronomer having no European Assistant whom he could entrust to carry on press revision during his absence, or when occupied by his more pressing official and astronomical duties. The remedy having at last been provided within the past official year, it may be reasonably hoped and expected that in future the results of observations will be rendered more promptly available, and that at no distant period the arrears of all kinds will be duly worked up. The Proceedings of the Madras Government of February 18th, 1871, before referred to, called only for a brief account of the meteorological progress of recent years; but it was impossible to render such an account without reference to the results of many years back still awaiting publication, and hence the detailed, yet condensed, history of what has been accomplished, as conveyed in the preceding paragraphs. I now proceed to give what information I can in regard to meteorological publications.

12. The early series of meteorological observations, from 1796 to 1821, appeared as a portion (pages 359 to 510) of a large folio volume entitled "Madras Observatory Papers," published under the superintendence of Mr. Goldingham in 1826. Only two copies of this work remain in the Observatory Library.

13. The second series of records, extending from 1822 to 1845, was published by Mr. T. G. Taylor in 1844. One hundred copies were forwarded to the India Office for distribution at home in May 1844, and thirty-five copies are still on hand in the Observatory.

14. Of the twenty-year series of hourly observations I can give a more complete account. The results of the first five years (1841 to 1845) were published by Mr. Taylor in a thick quarto volume in 1847, 300 copies being printed. Of these, 240 copies were sent to England for home distribution, and the remaining sixty were disposed of in India. Only one copy of this volume is in the Observatory Library, and no spare ones remain on hand.

Of the results of the second five years (1846 to 1850), 350 copies were published by Captain Jacob in the year 1854. Three hundred copies were despatched to England for home distribution, and fifty retained for disposal in India. Only one copy of this volume remains in the Observatory Library. A third volume of hourly results, from 1851 to 1855, is nearly ready for issue, 350 copies having been struck off; and the fourth and last volume of the series is now in hand, and about one-fourth of the way through.

15. Since the commencement of the year 1861 the Madras meteorological observations have been kept regularly reduced up to date, and have appeared weekly in the *Fort St. George Gazette*, and daily in the local newspapers, but have not been printed in the form of a separate volume. They will, of course, be forthcoming in their turn, but not until after the completion of the twenty-year hourly series now in hand.

16. The hourly meteorological records made at Singapore, from 1841 to 1845, were reduced under the superintendence of Mr. Taylor, and published in the year 1851 by his successor, Captain W. S. Jacob. Three hundred and thirty-four copies were forwarded to England for home distribution in September of that year. Only one copy remains in the Observatory Library.

17. The observations made at Cochin, Penang, and Bangalore, mentioned in paragraphs 6, 7, and 9, have never been either reduced or published. It appears strange that buildings should have been erected, instruments provided, the

Proceedings of the Madras Government, Public Department,
28th June 1871.

Honourable Company's Astronomer spared from other duties for several months, and establishments maintained, to secure observations which, when obtained, were thus suffered to be useless and unknown for above a quarter of a century.

18. The Dodabetta observations, although probably of inferior value in themselves, nevertheless received far more attention than those named in the last paragraph. The twelve months' records, from February 1847 to January 1848, were printed, and distributed directly they were completed. Those from February 1848 to the end of 1850 were printed in 1851, and the five years' results, from 1851 to 1855, in 1857. The remaining records, from January 1856 to April 1859, are still unpublished.

19. With regard to the proceedings of the new Meteorological Department, it is intended that the half-monthly and monthly mean results and certain useful monthly extremes shall appear in an annual report as soon after the close of each Calendar year as possible. As before stated, owing to uncontrollable causes not likely to recur, no reductions of any kind could be commenced until the year 1870 was considerably advanced; and it was then decided, in consultation with the Inspector-General of the Indian Medical Department and the Sanitary Commissioner, that it would be more advisable to publish the 1870 results first and to prevent subsequent reductions and publications falling into arrears, leaving the results for 1868 and 1869 to be brought up as early as convenient without interfering with current work. This plan has been accordingly adopted. The whole monthly means and extremes for 1870 have already appeared as Supplements to the *Fort St. George Gazette*, and will be reprinted in a more extended and complete form as a report for that year. All the reductions are, I am happy to add, in a forward state, and will, I trust, be available for publication at no distant period.

20. In conclusion, I append a tabular statement, or summary of the preceding report, which it is hoped may be found useful in showing at one view the present state of affairs as regards the distribution and remaining available copies of the various meteorological publications emanating from this Observatory from the commencement of its career to the close of the year 1870.

Nature of Records.	Present condition.	PUBLISHED.		Sent to England.	Available at Madras.
		Copies.	Year.		
Madras, 1796 to 1821	Printed ...	100	1827	53	None.
Do. 1822 to 1843	Do. ...	140	1844	100	35
Do. hourly, 1841 to 1845	Do. ...	300	1847	240	None.
Do. do. 1846 to 1850	Do. ...	350	1854	300	Do.
Do. do. 1851 to 1855	Do. ...	Nearly ready for despatch.			
Do. do. 1856 to 1860	Reduced ...	Results for 1856 printed.			
Do. 1861 to 1870	Do. ...				
Singapore, 1841 to 1845... ..	Printed ...	360 ?	1851	334	None.
Cochin, 1842 to 1844	Unreduced...				
Penang, 1843 to 1845	Do. ...				
Dodabetta, 1847 and 1848	Printed ...	300	1848	200	58
Do. 1848 to 1850... ..	Do. ...	300	1852	252	1
Do. 1851 to 1855... ..	Do. ...	300	1856	250	None.
Do. 1856 to 1859... ..	Unreduced...				
Bangalore, 1852	Do. ...				
Presidency, 1868 to 1870	Reduced ...	Results for 1870 just going to press.			

Proceedings of the Madras Government, Public Department,
28th June 1871.

No. 240. From the Government Astronomer and Meteorological Superintendent, to the Under Secretary to Government, Fort St. George, dated Madras Observatory, 27th May 1871.

In reply to your Official Memorandum, No. 134, of the 20th instant, I beg leave to state that I feel scarcely able to decide upon the number of copies of the works published by the Meteorological Committee in England required for the use of offices in this Presidency. It appears to me desirable that copies should be supplied to the following establishments:—

Madras Observatory, three copies.
Sanitary Commissioner.
Inspector-General, Indian Medical Department.
Do. British do.

Should any offices occur to you as proper to be added to the above list I shall be obliged by your appending them thereto. I have named three for the Observatory so as to have one for the Library, one for lending out when required, and a spare one for any unforeseen demand.

No. 241. ORDER THEREON, 28th June 1871, No. 935.

In the first of the foregoing letters the Government Astronomer replies to G. O., dated 18th February last, No. 213, directing him to report what has been done in this Presidency of late years respecting the systematic registration of meteorological observations, and to summarize and discuss the results.

2. The Government Astronomer deals with the question under two heads, viz., "Observations and Reductions" and "Publications," and gives, in a tabular form, a summary of the work done and publications issued.

3. From the summary it appears that the results of the observations made at Madras (excluding those already reduced, printed, and circulated) from 1851 to 1855 have been finished and are ready for despatch; that the results from 1856 to 1870 have been reduced, but that those for 1856 only have been printed. The results for the entire Presidency from 1868 to 1870 have been reduced, and the results for 1870 are being sent to the press.

4. The results of the observations made at Cochin from 1842 to 1844; in Penang from 1843 to 1845; at Dodabetta from 1856 to 1859; and at Bangalore in 1852, remain unreduced.

5. The Government Astronomer will be called upon to explain what arrangements he has made for having these results reduced and printed, and when he expects to have the work completed.

6. Copies of these Proceedings will be submitted to the Secretary of State for India and to the Government of India.

7. The Secretary of State will be informed that there remain in stock fifty-eight printed copies of the observations made at Dodabetta for 1847 and 1848, one copy of the observations from 1848 to 1850, and none of those from 1851 to 1855.

Proceedings of the Madras Government, Public Department,

28th June 1871.

8. The Government of India will be informed that twelve copies of the works published by the Meteorological Committee in England will be required for use in this Presidency.

(True Extract.)

Acting Chief Secretary.

To the Government Astronomer.

Exd. A. S. Rodgers.

PUBLIC DEPARTMENT,

No. 936.

FROM
W. HUDLESTON, Esq.,
Acting Chief Secretary to the Government of Fort St. George,

TO
THE SECRETARY TO THE GOVERNMENT OF INDIA
IN THE DEPARTMENT OF REVENUE,
AGRICULTURE, AND COMMERCE.

SIR,

I am directed to transmit copy of the Proceedings of this Government of this date, No. 935, which contain a concise report from the Government Astronomer of all that has been done in this Presidency of late years to promote a systematic registration of meteorological observations and to summarize and discuss the results, and to state that copies of the meteorological reports that have been printed from 1851 to 1855 and of those that are being printed will be forwarded as soon as they are received from the Government Astronomer.

2. No copies are available of the last published report of the results of the observations made at Madras from 1846 to 1850.

3. I am to request that twelve copies of the works published by the Meteorological Committee in England may be furnished for use in this Presidency.

I have the honour to be,

Sir,

Your most obedient servant,

FORT ST. GEORGE,
28th June 1871.

Acting Chief Secretary.

Ed. A. S. Rodgers,

Govt. of 118713

PUBLIC.

TO
THE GOVERNMENT ASTRONOMER

Dated June, 28th.

Recd.

Encl.

G. O., 28th June 1871, No. 935.

JUNE.

Nos. 239-243.

Passing orders on a report from the Government Astronomer as to what has been done in this Presidency of late years respecting the systematic registration of meteorological observations and to summarize and discuss the results.

June 1871 Dept.

[]

From Government of

Fort St. George.

Dated 28th June 1871. No.

R.

Enclosure

Spare copies

D. No.

Procs.

D.

L. No. 936.

No.

Transmitting copy of the orders passed on a report from the Government Astronomer as to what has been done in this Presidency of late years respecting the systematic registration of meteorological observations and to summarize and discuss the results.

Public Department.

No. 134.

Memorandum.

The Under Secretary to Government Public Department is directed to request that the Government Astronomer will, with reference to para. 3 of G. O. dated the 18th Feb^y last no. 223, state for the information of Govt. how many copies of the works published by the Meteorological Committee in England will be required for use in this Presidency.

Fort Saint George
28th June 1871

(Signed) H. E. Stokes
Under Secretary.

J. of the Government Astronomer.

Smith

Home Department,

Geographical
No. 26th May 1877

No. 214.

To

The Chief Secy. to Govt. Madras.

SIR,

Subject.

*Systematic registration of
meteorological observations*

I AM directed, to invite attention
to the communication marginally
noted,* and to request an early reply
thereto.

I have the honor to be,

SIR,

Your most obedient Servant,

George Smith

Under Secy. to the Govt. of India.

No. 29 dated 31st Jan. 77.
sequent reminder
118 dated 27th March
145 of 22nd April

2.0.-

2.00

Madras Observatory. May 29th 1891.

From

N. R. Pogson, Esq.,

Government Astronomer & Meteorological Superintendent.

To

W. E. Stokes Esq.

Madras Secretary to Government

Dear Sir,

In reply to your official Memo No 134 of the 20th instant I beg leave to state that I feel scarcely able to decide upon the number of copies of the works published by the Meteorological Committee in England required for the use of Offices in this Presidency.

It appears to me desirable that copies should be supplied to the following Establishments. —

Madras Observatory. (Three copies)

Sanitary Commissioner.

Inspector General, Indian Medical Dept.

Public 1891, December-

1891

1891

1891

1891

1891

1891

1891

1891

1891

1891

1891

1891

Inspector General, British Medical Department

Should any Officer turn to you as proposed
to be added to the above list I shall
be obliged by your appending them thereto.
I have named three for the Observatory
so as to have one for the library - one
for lending out when required, and a
spare one for any unforeseen demand.

I have the honor to be
Sir

Your most obedient servant
A. R. Paget

[Faint, illegible handwritten text]

27 May 1977.
 12. 35. 1977

W. Huddleston Esq^r—
 As Chief Secretary to Government
 Port St George.

Sur

Herewith I have the honor to submit a concise account of what has been done in the science of Meteorology in the Madras Presidency up to the present time; in compliance with the Proceedings of the Madras Government, Public Department, 18th February, 1871. In doing so it will be more convenient to treat the subject under two separate heads viz: first, Registers, including both Observations and Predictions, and secondly, Publications:—

Observations and Reductions.

1. Observations of the Barometer and Thermometer were commenced at Madras Observatory in the year 1796. Measurements of Rainfall date from August 1803. A break of six years occurs, from 1807 to 1812 inclusive, owing to the absence of the Astronomer and the utterly unreliable character of the work nominally carried on meanwhile. Accurate observations were resumed in 1813 and continued until the end of 1821.

2. A fresh series of meteorological observations was commenced in 1848 and continued at the Observatory until 1861, and these appear to have been conducted with great care and a due sense of their importance throughout.

3. A very elaborate and valuable series of hourly observations, agreeably to the plan devised by the Committee of Physics of the Royal Society, was begun in March 1841, in the College Compound, about a quarter of a mile distant from the Madras Observatory; with entirely new and superior instruments supplied by the Royal Society for the purpose. Hourly Magnetical Observations were also included in the new scheme, but with these the present Report has nothing to do beyond a mere passing mention of the circumstance. In October, 1857, the College Observatory was dismantled and the instruments were removed to the Observatory, the hourly observations being there continued until the 1st February 1861, when twenty years complete records having been secured, it was no longer considered necessary to carry on so extensive and laborious a system, involving an expensive and distinct establishment, and accumulating so formidable an array of, at that time, only half reduced available results.

4. The Madras meteorological observations have been since continued with the addition

of recent instrumental improvements, the registers being made three daily. Measures of the velocity of the wind, an important step in advance of results furnished by the old and comparatively useless and uncertain pressure gauges, date from September 1861, and a fine new thermometer, upon the Réaumur principle, was erected in June 1864, which has been furnishing hourly determinations of Wind Direction, velocity, and rain-fall, in addition to the usual records up to the present time. All these observations are completely reduced and ready for press.

5. A series of hourly observations similar to these at Madras, the instruments being also supplied by the Royal Society, was commenced at Singapore in 1841 and continued until the end of 1845. The reason for referring to these, although not in the Madras Presidency will appear hereafter.

6. Meteorological and Tidal observations were carried on at Cochin, from July 1842 to December 1844, under the management of the Honorable Company's Astronomer at Madras, the records being made four times daily. These exist only in manuscript and are wholly unreduced.

7. A precisely similar series of two-hourly meteorological and tidal observations was carried on at Penang, from March 1843 to August 1845, also under the direction of the Honorable Company's

Astronomer, the uncorrected manuscripts of which are preserved at the Madras Observatory. 8 A Meteorological Observatory was established at Dodabetta, the highest point of the Nilgerry Hills, in December 1847, at which records were maintained until April 1859. The observations were reduced up to the end of 1855, but those made during subsequent years are still only in manuscript. The records were made twice daily, but the thermometrical results were rendered ^{comparatively} useless through the instruments being placed on the inside of a brick building, so that even when snow and ice were about outside, a minimum was rarely noted so low as 31°; while at a considerably lower altitude at Ottacamund, it is not uncommon thing for as low a temperature as 20° Fahrenheit to be experienced during the cold season.

The mean temperature may be approximately obtainable, but it is certain that such observations cannot give any correct idea of the daily range, or of the hygrometrical peculiarities of the station.

9 A Meteorological register was carried on at Bangalore from January to November 1852, by a trained assistant from the Madras Observatory, under the direction of the Astronomer, but these observations are also uncorrected.

10 The new Meteorological Establishment of the Madras Presidency, constituted in 1867,

now comprises the following twelve stations, commencing from the following dates

Batana	1847 Decr.	
Bangalore	1868 Jan 1	(12)
Bellary	Feb	
Channarayana		
Madura		
Goolun	March 16	
Burnool	April 16	
Tuchinopoly	July 1	
Negapatam	18	
Masulipatam	Aug 17	
Secunderabad	1869 July 1	
Wellington	1870 April 17	

Each of these twelve Stations is supplied with a complete set of meteorological instruments of the best modern construction, and by Mr. Megret & Zambra & Mr. Browning of London. Every precaution was taken before issuing these instruments to ensure their strict correspondence with the standards of the Madras Observatory. The observations are recorded by paid observers, mostly natives, who have been previously trained in the Madras Observatory. Each station is under the superintendence of a Medical Officer, whose business it is to see that the observations are ^{promptly} and uninterruptedly made, that the registers are kept in efficient order, and the copies of the registers forwarded half-monthly to the Madras Observatory, where, up to this time, all

reductions have been necessarily effected. Owing to a deficiency of hands and other unavoidable causes it was impossible to have the reductions fairly commenced until the year 1870 was far advanced, when it was considered best to prepare first the results of the current year and afterwards those for 1868 and 1869. This has accordingly been done and future reductions will be kept as nearly up to date as other duties will permit.

Publications.

1. The backward and neglected state of meteorological publications in the Madras Presidency is much to be deplored but easily to be accounted for. It has arisen entirely from the circumstances of the Astronomer having no European Assistant whom he could entrust to carry on proofs revision during his absence, or being occupied by his more pressing official and astronomical duties. The remedy having at last been provided with the first official year it may be reasonably hoped and expected that in future the results of observations will be rendered more promptly available, and that at no distant period the arrears of all kinds will be duly worked up. The Proceedings of the Madras Government of 1871 before referred to, give only a very brief account of the meteorological progress of recent years, but

9 2
it was impossible to render such an account without reference to the results of many years back still awaiting publication, and hence the detailed yet condensed history of what has been accomplished, as recorded in the preceding paragraphs. I now proceed to give what information I can in regard to meteorological publications.

12. The early series of meteorological observations, from 1796 to 1821, appeared as a portion (pages 359 to 510) of a large folio volume, entitled "Madras Observatory Papers," published under the superintendence of W. Goldingham in 1826. Only two copies of this work remain in the Observatory Library, and I know nothing in regard to the number printed or distributed in India or Europe.

13. The second series of records extending from 1822 to 1843, was published by Mr. R. Taylor in 1844. I am informed that the number of copies printed but merely that the same were sanctioned for the purpose of eight hundred copies. One hundred and thirty copies were forwarded to the India Office, for distribution at home in May 1844, and thirty-five copies are still on hand in the Observatory.

14. Of the twenty-year series of hourly observations I can give a more complete account. The results of the first five years

1841 to 1845 were published by Mr. Taylor in a thick quarto volume in 1847. Three hundred copies being printed. Of these 250 copies were sent to England for home distribution, and the remaining 50 were disposed of in India. Only one copy of this volume is in the Observatory Library and no spare ones remain on hand. Of the results of the second five years, 1846 to 1850, 350 copies were published by Captain Jacob in the year 1851. Three hundred copies were despatched to England for home distribution and fifty retained for disposal in India. Only one copy of this volume remains in the Observatory Library. A third volume of hourly results, from 1851 to 1855, is nearly ready for issue. Three hundred and fifty copies having been struck off, and the fourth and last volume of the series is now in hand and about a fourth of the way through.

15. ~~Since the commencement of the year~~ 1861 the Madras Meteorological Observations have been kept regularly reduced up to date, and have appeared weekly in the Fort St. George Gazette, and daily in the local newspapers, but have not been printed in the form of a separate volume. They will of course be forthcoming in this form, but somewhat after the completion of the Twenty Year.

5 2 4
Hourly Series now in hand. 16. The hourly meteorological records made at Singapore, from 1841 to 1845, were reduced under the Superintendence of Mr. Taylor, and published in the year 1845 by his successor Captain W. S. Jacob. Three hundred and thirty four copies were forwarded to England for home distribution in September of that year. Only one copy remains in the Observatory Library. 17. The observations made at Cochin, Penang, and Bangalore, mentioned in paragraphs 6, 7, and 9 have never been either reduced or published. It appears strange that buildings should have been erected, instruments provided, the Honorable Company's Astronomer spared from other duties for several months, and establishments maintained, to secure observations which when obtained were thus suffered to be useless, and unknown for above a quarter of a century.

18. The Diutabetta observations, although probably of inferior value in themselves, nevertheless received far more attention than those named in the last paragraph. The two or months records from February 1847 to January 1848 were printed and distributed directly they were completed. Those from February 1848 to the end of 1850 were printed in 1851, and the five years' results from 1851 to 1855, in 1857. The remaining records, from January 1856 to April

1859 are still unpublished.

19. With regard to the proceedings of the new Meteorological Department, it is intended that the half monthly & monthly means results and certain useful monthly extremes shall appear in an annual report as soon after the close of each calendar year as possible. As before stated, owing to uncontrollable causes not likely to recur, no reductions of any kind could be commenced until the year 1870 was considerably advanced, and it was then decided in consultation with the Inspector General of the Indian Medical Department and the Sanitary Commissioner, that it would be more advisable to publish the 1870 results first and to prevent subsequent reductions and publications falling into arrears, leaving the results for 1868 and 1869 to be brought up as early as convenient without interfering with current work. This plan has been accordingly adopted. The whole monthly means and extremes for 1870 have already appeared as Supplements to the Fort St. George Gazette, and will be reprinted in a more extended and complete form as a Report for that year. All the reductions are now happy to add in a forward state and will I trust be available for publication at no distant period.

20. In conclusion I append a tabular statement as summary of the foregoing Report,

which it is hoped may be found useful, in shewing at one view the present state of affairs as regards the distribution and remaining available copies of the various meteorological publications emanating from this observatory from the commencement of its career to the close of the year 1870.

Nature of Records	Present Condition	Published		Sent to England	Available at Madras
		Copies	Year		
Madras 1796 to 1821	Printed	100	1827	58	None
Madras 1822 to 1842	Printed	150	1846	100	50
Madras Hourly 1841 to 1845	Printed	300	1847	240	None
Madras Hourly 1846 to 1850	Printed	350	1852	200	None
Madras Hourly 1851 to 1855	Printed	Nearly ready for despatch.			
Madras Hourly 1856 to 1860	Reduced	Results for 1856 printed.			
Madras 1861 to 1870	Reduced				
Poigassore 1841 to 1845	Printed	300?	1857	220	None
Cochin 1842 to 1846	Unreduced				
Penang 1843 to 1845	Unreduced				
Dodabatta 1847 and 1848	Printed	200	1848	200	50
Dodabatta 1849 to 1850	Printed	200	1852	250	1
Dodabatta 1851 to 1855	Printed	300	1856	250	None
Dodabatta 1856 to 1859	Unreduced				
Bangalore 1852	Unreduced				
Presidency 1860 to 1870	Reduced	Results for 1870 just going to press			

I have the honor to be

Sir

Your most obedient Servant

N R Pigeon

Government Astronomer and
Meteorological Superintendent.

Public 1871 September 17/1871
 Public 1871 September 17/1871
 1871 May 19

Public 1871 September 17/1871
 The Government Astronomer and
 Meteorological Superintendent

To
 The Chief Secretary to Government
 (W. P. George)
 1871 May 19

Madras Observatory, 13th May 1871

No 919
 Report on the Meteorological
 Observations, Predictions and
 Publications emanating from the
 Madras Observatory from 1796
 to 1870

239-240

Public Department.

PROCEEDINGS of the MARDAS GOVERNMENT.

Read the following letter from

the Government Astronomer,
 Madras, dated 13th and 27th
 May 1871, Nos.

Order thereon 28 June 1871

In the first of the
 foregoing letters the Govt.
 Astronomer ~~submitted~~
~~report called for in G.O.~~
 dated the 18th February
 last, No 213, of what has
 been done in this Presidency
 of late years respecting the
 systematic registration of
 Meteorological observations,
 and to summarize and dis-
 cuss the results.

The

2. The Government Astronomer deals with the question under two heads viz: "Observations and Reductions", and "Publications" - and gives, in a tabular form, a summary of the work done, and publications issued.

3. From the summary it appears that the results of the observations made at Madras (excluding those already reduced, printed and circulated) from 1851 to 1855 have been finished and are ready for despatch; that the results from 1856 to 1870 have been reduced, but that those for 1856 only have been printed. The results for the entire Presidency from 1868 to 1870

(15) 10
1870 have been reduced, and the results for 1870, ~~are~~ ^{are} being sent to the Press.

4. The results of the observations made at Cochin from 1842 to 1844; in Penang from 1843 to 1845; at Rodabetta from 1856 to 1859, and at Bangalore in 1852 remain unreduced.

5. ~~With reference to this~~
The Govt Astronomer will be called upon to ~~state~~ ^{explain} what arrangements he has made for having these results ~~reduced~~ ^{reduced} and printed, and ~~the probable date on which~~ ^{when} he expects to have the work completed.

6. Copies of these Proceedings

Proceedings will be sub-
mitted to the Secretary
of State for India and to
the Government of India.

7. The Secretary of State
will be informed that these
~~are~~ ^{in the printed} remaining 58 copies
of the observations made
at Dodabetta for 1847 and
1848, one copy of the ob-
servations from 1848 to 1850,
and none of those from
1851 to 1855.

8. The Government of
India will be informed
that twelve copies of the
works published by the
Meteorological Committee
in England will be required
for use in the Presidency.

L.B.

L.

The Govt. Astronomer

35/9/40.

desp 6/7 with
6 lines of lines to 935.

Public Department.
No. 986.

To
The Secretary to Government
of India.

~~in the~~ ~~Public~~ Department of
Revenue, Agriculture & Commerce.
Sir,

I am directed to transmit
copy of the Proceedings of
this Government of this
date, No 935 which contain
a concise report from the
Government Astronomer of
all that has been done in
this Presidency of late years
to promote a systematic
registration of meteorolo-
gical observations, and to
summarize and discuss
the results, and to state
that copies of the Meteorologi-
cal reports that have been
printed from 1851 to 1855
and

J. P. S.

Public Dept. to Secy. 8
July 1871 No. 19.

Govt. of 1871 Madras.

To
The Gov. Astronomer

Dated June 28 }
Recd. 1871, No. 935.

Nos. 239, 243

Passing orders on a report
from the Gov. Astronomer
as to what has been done
in this Presidency of late years
respecting the systematic
registration of meteorological
observations and to summarize
and discuss the results.

2422.

desp 6/7
12/7/71

and of those that are being
printed will be forwarded
as soon as they are received
from the Govt. Astronomers.

2. No copies are available
of the last published report
of the results of the obser-
-vations made at Madras
from 1846 to 1850.

3. I am to request that
twelve copies of the works
published by the Meteoro-
-logical Committee in
England may be furnished
for use in this Presidency.



Fort St. John
28 June 1871.

18 , Department

No.

To
The Secretary to the
Government of
Department

Dated 187 .

Home 1871. Dept.

Public

From Government of

Fort St. George.

Dated June 29 1871 No. Enclosures.
R. spare copies.

D. No. 930
L. No. 930

Nos 239. 243.

Transmitting copy of the orders
passed on a report from the
Govt. Astronomer as to what
has been done in the way of
late years respecting the sys-
tematic registration of
Meteorological observations
and to summarize and
discuss the results.

243