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MADRAS RECORD OFFICE.

Government of Madras.

Public DEPARTMENT.

G.O. No.	377	Press Mis.
Dated	14-4-	1966.

Not to be folded or roughly handled

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Proceedings of the Madras Government, Public Department,
14th April 1866.

Read the following papers :—

No. 57. From the Government Astronomer, to the Chief Secretary to Government, Fort Saint George; dated Madras, 16th March 1866.

So long since as the middle of the year 1862, His Excellency the Governor in Council suggested, in a Minute published with the Order thereon, 28th July 1862, No. 889, the want of some reliable series of Meteorological Observations at various points in the Presidency, and that the Astronomer should be asked to state what changes in his establishment would be required to enable him to carry out the reduction of such Observations, in addition to his existing duties. The requisite remodelment of the Observatory Establishment, not merely to render possible the attainment of the series of records suggested in the Minute referred to, but indispensable to maintain the efficiency of the Institution itself, though sanctioned by the Government of India, was unfortunately negatived by the Home Government, and ever since plans and suggestions, such as that put forth by His Excellency, and several others, conducive alike to the promotion of science and to the general and local utility of the Observatory, have been unavoidably renounced, or at least suffered to stand in abeyance, simply from the inadequacy of the present establishment to accomplish more than the current routine of its already heavily overstrained scientific labors.

2. The great importance of His Excellency's proposal has, however, never been forgotten or lost sight of by the Government Astronomer, but, on the contrary, it has been his constant aim and intention to start the desired series of records as early as possible. Three conditions had, however, to be considered :—1st, the supply of the requisite instruments; 2ndly, the probability of finding volunteer Observers at the places selected; and, 3rdly, the mode of publishing the results obtained, when the Astronomer could find leisure for their arrangement and examination. He has now the honor of submitting his views upon each of these heads for the consideration and orders of Government.

1st.—In regard to the requisite instruments. They should be of the best description, by Messrs. Negretti and Zambra; and none should be issued for use until they had been compared with the Standard instruments of the Madras Observatory. It would be well if with the Indent to the Home Government, a letter of detailed specification to the makers were forwarded, from the Astronomer, to prevent, so far as possible, any mistakes in the articles supplied. For instance: Sun Thermometers graduated up to 130° or 140° suffice for England, but in India such would inevitably burst under an average April sun. Rain gauges, holding three or four inches of rain, as often used at Home, would overflow in any ordinary monsoon day. Hence the necessity for detailed descriptions in ordering out instruments for tropical observations. The instruments required to form a complete set, with the prices taken from Messrs. Negretti and Zambra's List, are as follows; though probably

for so considerable an order some reduction would be made from the cost of the separate articles as given in the List :—

	£	s.	d.
1 Standard Barometer with wall bracket...	8	8	0
1 Dry and Wet Bulb Hygrometer...	2	2	0
2 Self-registering Maximum Thermometers...	2	2	0
1 Solar Radiation Thermometer...	1	5	0
1 Do. do. in Vacuo...	1	10	0
2 Spirit Minimum Thermometers...	2	10	0
1 Glaisher's Copper Rain Gauge...	1	10	0
1 Robinson's Anemometer...	3	3	0
1 Moffatt's Ozonometer 8s. 6d.; with Ozone Box 18s. 6d.	1	7	0
1 Wind Vane or Anemoscope (not in list, but estimated about)	0	17	0
1 Copy Drew's Practical Meteorology...	0	5	0
1 Do. Glaisher's Tables of the Corrections of Barometers for Temperature...	0	1	0

Total extreme estimate for one complete set. £25 0 0

Seven complete sets should be provided : six for distribution, and the seventh to be kept in the Observatory Stores in reserve, ready compared, to re-place any damaged instruments with the least possible delay. There should also be added to the above complete seven sets the following additional items, in reserve, for the Observatory or other special service that may arise.

	£	s.	d.
6 Self-registering Maximum Thermometers...	6	6	0
3 Solar Radiation Thermometers...	3	15	0
3 Do. do. in Vacuo...	4	10	0
3 Spirit Minimum Thermometers...	3	3	0
1 Independent Standard Thermometer...	5	5	0
1 Lind's Wind Gauge (Self-registering)...	2	2	0
1 Moffatt's Ozonometer and Ozone Box...	1	7	0
	26	8	0
Seven complete sets as specified in the above list...	175	0	0

Total estimate for all demands... £201 8 0

The Barometers, the Self-registering Maximum and Minimum Thermometers, and the Rain gauges, might be had from the stores of the Public Works Departments; but it would be much better to have the whole supplied direct from England, as the withdrawal of so many instruments from the Public Works Stores would most likely merely give rise to another Indent upon the Home Government, to replace those supplied to the Observatory by that Department. All instruments required for scientific observations should be solely in charge of the Astronomer, and should form part of the Observatory Stores, i. e., should be entered upon the list of Observatory property; as otherwise, the very strict routine of the Public Works Stores might occasion serious breaks in a series of Observations, by keeping an Observer waiting until Indents were passed and the formal receipts given, before the issue of new instruments could be permitted. The Astronomer on the contrary, entertaining far more regard for the continuity of a series of records than for mere routine

forms, would replace damaged instruments *immediately*, upon an intimation of their being required by an Observer, leaving all book-keeping adjustments, as minor considerations, to be attended to *after* instead of before the supply of the instruments applied for. No provision has, however, been made for any such expenditure in the Budget Estimate of the Observatory for the ensuing year; neither would it be quite fair to debit the Observatory account with so costly an addition to its outlay, for instruments required only for a new and special service, totally distinct from the ordinary and average wants and expenses of the Madras Observatory itself.

2nd.—As to the stations to be selected and the probability of securing trustworthy Observers thereat. A Circular issued by the Principal Inspector General of the Medical Department, early in 1843, inviting the co-operation of Medical Officers for the object in view, was promptly met by offers from no less than fifteen volunteers willing forthwith to take charge of instruments, to register their readings, and to transmit the same to the Government Astronomer for examination and publication. It was to be regretted that most of these gentlemen appeared to have mis-interpreted the Circular issued by Dr. Cole into an offer of the charge of the instruments, upon the understanding that a fair and efficient Register should be maintained; whereas, the information sought was merely to know how many, if any, of the Medical Officers in the various parts of the Presidency, would be willing and able to lend their aid, in the event of the supply of requisite instruments being sanctioned by Government. Most of the volunteers in question promised their own individual charge of the desired records, but in one or two cases the aim seemed to be rather to secure some additional pay to a Writer or Apothecary, to whom the care of the Register was to be entrusted. It need scarcely be remarked that such offers merited only decided and immediate rejection. It is, however, certain that there will be no difficulty, at any time, in securing the valuable co-operation of more than twice as many disinterested and able Observers as it is now proposed to provide instruments for. It is also desirable that a clear understanding should exist, that incomplete or interrupted records being comparatively worthless, a preference will be given in the supply of sets of Meteorological instruments to those gentlemen who can hold out the best hopes of a continuous series of not less than five years' observations being obtainable at their stations. To secure this most important end it will of course be necessary for the officer in charge to train some intelligent subordinate to read off the various instruments in use during his absence or when otherwise engaged, but the entire care of the register, and more especially the reduction of the observations, should never be made over to any inferior or unskilful hand upon any pretence whatever. An excellent two years' series of Observations has already been taken by Dr. W. Arnold Smith, lately at Secunderabad, with instruments provided by himself, and it is to be hoped that his successor will continue the same with as much regularity as possible. Dr. J. Miller, of Ootacamund, has recently been supplied with as nearly a complete set as the united resources of the Observatory and Public Works Department could make up from their respective Stores. Dr. J. L. Ranking, at Trichinopoly, is very desirous of forwarding the science of Meteorology, and is at this time keeping a register, though with what instruments the Astronomer is not aware. Other desirable positions are Nag-poor or Kamptee; Ganjam or Cuttack; Masulipatam or Guntoor; Bellary, and

Mysore or Bangalore. It would be easy to multiply the number of desirable stations if more instruments were available, but the eight Registers proposed, six new and two already in progress, besides Madras, would yield data of great value to Meteorological Science.

3rd.—*Publication of Results.*—The printing in detail of the Observations at the eight stations in contemplation, would require not less than 192 pages of Royal octavo, and would thus form a very considerable annual Appendix to the Madras Observations, when the time arrives at which the Astronomer is able to publish his results regularly, for the information of the scientific public. To give only condensed reports, as for instance Half Monthly Averages, would of course occupy much less space; but if the Observations are worth taking at all, they are surely worth the trouble and expense of printing in full, for it must be borne in mind that in India manuscripts are far more perishable than in a temperate climate, and a few years hence the originals themselves, unless printed and widely diffused, might be as completely lost as though they had never been collected. Abridgment appears therefore very undesirable, and in the end, perhaps mistaken economy. The Meteorological, Magnetical, and Astronomical proceedings of the Observatory, throughout the twenty year series of hourly Observations of the two former branches, have been always printed separately, but on far too extensive a scale in the opinion of many besides the present Astronomer. In fact, the standard pursuit of the Establishment, viz., Astronomy, has suffered materially from the two lavish outlay occasioned by the publication of the Magnetical and Meteorological Observations, extending over the unnecessarily long period from 1841 to 1861. The valuable time of the principal and his assistants has been lost to the higher and more legitimate duties of the office, through the laborious reductions and press superintendence involved in these sub-diary and minor branches. Yet the Observations have been given to the world in far less detail and at considerably less expense, than the similar results of the Bombay Observatory; those of the vast Imperial Establishment so long maintained in Russia, and of numerous other Foreign Observatories. Further, the parties in search of purely Astronomical information rarely care for, or make any use of, the other portions of the volume, when all are incorporated in one publication; while the same remark holds good for the Meteorologist, in regard to Star Catalogues and Astronomical Observations in general. Meteorological records may be printed off rapidly after the close of each year, and indeed may be kept in continual progress, but in the present helpless state of the Observatory staff, for want of proper European assistance, the completion of the astronomical reductions, in fit form for publication, seems hopelessly indefinite. The Astronomer therefore respectfully suggests that in the event of the supply of the proposed sets of Meteorological instruments, the observations taken therewith shall be published, together with those made in the Madras Observatory, Magnetical as well as Meteorological, in an annual volume of about 250 pages, as soon after the end of each year as possible; and that the astronomical proceedings shall, as formerly, be kept distinct from those in question in the other two branches of physical science.

It would, however, be advisable for each Meteorological Observer to furnish his results weekly to some local paper, and a brief abstract of the Bi-monthly averages might appear in the "Fort Saint George Gazette."

4th.—In reference to the Proceedings of the Madras Government, Public Department, 20th December 1865, and the Order thereon, No. 1288, the Government Astronomer requests to be informed as to which Department is to bear the expense of the supply of the instruments furnished to Dr. Miller of Ootacamund, agreeably to the Order referred to. Most of the instruments were supplied by the Public Works Stores, but others from the Observatory Stores. If the Medical Department is to bear the expense incurred, Dr. Miller should indent separately upon the Public Works Department, and upon the Observatory, for the instruments supplied by each and they should be crossed off the Store lists of each establishment. If on the other hand they are still to be retained upon the Public Works books, then Mr. Moncrieff, the Superintendent of Stores, should indent upon the Astronomer for the items supplied from the Observatory; but if as proposed for the new complete sets of Meteorological instruments specified in Section 1st of this letter, they are to be considered as Observatory property, lent out for the purpose of keeping a scientific register, it will then be for the Astronomer to indent upon Mr. Moncrieff for the Public Works items; but in such case there are no funds available in the current year's Budget, out of which to pay for the instruments thus transferred from the Public Works to the Observatory Stores.

No. 58. From the Officiating President Sanitary Commission, Madras, to the Chief Secretary to Government, Fort Saint George; dated Madras, 10th April 1866, No. 900.

Having been informed that Mr. Pogson, the Government Astronomer, has submitted a plan for the registration of Meteorological Observations throughout this Presidency, I have the honor to request that this Commission may be favored with a perusal of the same, before orders are passed upon it.

2. As stated in my Annual Report for 1865, this Commission have had in contemplation a similar proposal, its object being the comparison of climate and disease.

3. Mr. Pogson's scheme would probably be a strictly scientific inquiry as to climate, and would differ considerably from that proposed by us in its selection of stations and other points of detail essential to sanitary inquiries.

4. The Government Astronomer has expressed his willingness to co-operate with us in these matters, and, in communication with him, arrangements could be made to combine both objects.

No. 59. ORDER THEREON, 14th April 1866, No. 377.

The Governor in Council directs that a copy of Mr. Pogson's letter of the 16th ultimo, be forwarded to the Sanitary Commission, as requested in the Officiating President's letter of the 10th instant.

2. The Government will defer passing orders on the first of these letters, until the suggestions of the Sanitary Commission shall have been laid before them.

(True Extract).

To the Sanitary Commission.
,, Government Astronomer.

Exd. J. H. Burns.

Chief Secretary.

Former No 318 of 1866
Indy Pro 24 March 1866
Nos 631 & 632

not of record

Public 1866 Dept.
From,
The Offg President Sanitary Commission
Madras.
To,
The Secretary to Government
Public Department
Fort Saint George.

Dated 10th
Recd 11th April 1866.

19th April
No 407.

Requests to be favored with
a perusal of the Government As-
tronomer's scheme for the regis-
tration of Meteorological observa-
tions throughout this Presidency
previous to orders being passed
upon it. -

PROCEEDINGS of the MADRAS GOVERNMENT.

Read the following papers.

From the Govt. Astronomer. 2/16 March 1866, No 310.

From the Offg. President of the
Sanitary Commission. 2/10 April 1866, No 900.

Order thereon. 14th April 1866. No 377.

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2. The Govt. will defer passing orders on the first of these letters, until the suggestion,

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Sanitary Commission }
Govt. Astronomer } closed 1/6

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No. 377

PROCEEDINGS OF GOVERNMENT.

Dated 14 April 1866-

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