Pension (1898) Department.

ORDINARY MS.

G.O., No. 144

DATED 24th July 1898.

[Despatch Abstract.]

Sanctioning the re-employment of the pensioner Abdul Rahman as Village Immuff of Akkidu, under article 576 C.S.R.

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.
L.	766	7-10-98					
L.	946	10-12-97					

FURTHER PAPERS.

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

~~Revenue~~ Pension (1898) Department.

through

The Accountant-General. CURRENT No. ~~1082~~ 112

Zb 14/2/98

W.

From The Board of Revenue
Land Revenue
Madras.

~~Order~~ Endt R No. 382 d/14th Feby. 1898.

Transferred

to the Pension Department.

Allmanpurmuls

a/ass. Secy to Govt.

GOVERNMENT OF MADRAS, 15 FEB 1898 PENSION DEPARTMENT. No. 84.

Dated 28th January 1898.

Received 4 Feby

Registered 8 "

Enclosures /

Spare copies

SUBJECT.

Submitting to Government, with the Board's recommendation, letter from the Collector of Godavari regarding the appointment of a Police Pensioner, as Village Munsiff of Akiveedu Bhimavaram Taluk.

GR.
11 Feb 98.

Order 24th Feby 1898 No. 114.

In the circumstances stated by the Board of Revenue, the re-employment of pensioner Abdul Rahman as Village Munsif of Akiveedu is sanctioned under art. 576 C.S.R.

To 18/2/98
17.2.98.
The A.G.
Bd of Rev. L.R.

18/2/98

Note

The Acctt-genl says that there is no objection

PTO

(A)

to sanction being given. The Board reports the circumstances under which the pensioner was selected for the place and thinks that the re employment is in the interests of public service. The man is 54 years of age now. His character while in the Police service was recorded as "fair". Precedent — G.O. 748 13-12-97

Pension - is also put up. (Flag B)

11/ 17.2.98.

BACK PAPERS.

G.O.	No.	Department.	Date.
—	1436	Rev.	28 — 97

FURTHER PAPERS.

G.O.	No.	Department.	Date.

Reference on G.R. No 162 — of 1898

In replying the above should be quoted.

ACCOUNTANT GENERAL MADRAS 1 FEB 98

REVENUE BOARD OFFICE MADRAS

(LAND REVENUE.)

162/1

Read letter from the Collector of Godavari R. C. No. 15/Ver of 98 dated 10 January 1898.

Reference: No. 84 dated 28 January 1898.

Submitted to Government

2. The village Munsiff of Akiveedu having been dismissed, the Collector has appointed one Abdul Rahiman, a pensioned Police Head Constable instead, during the life time of the dismissed man. The Collector's nominee is the Chairman delegate of the Local Union and a member of the Taluq Board. He is reported to do his work satisfactorily, and being a Muhammadan (Musalman) is quite unconnected with the dismissed man, and the factions of the village, and as such, the best of the available candidates.

3. In these circumstances, the Board

Pension (1898) Department

Government {1898} of Madras.

PUBLIC.

GOVERNMENT OF MADRAS 12 PENSION DEPARTMENT

Current No. 109

Read. 12th Feby } 1898. Enclosures —
Regd. — do — } Spare copies 1

G.O., No. 191, 2nd February 1898.

FEBRUARY.

Reorganisation of the Indian Observatories.

Communicating to the Government Astronomer and to the Meteorological Reporter to Government endorsement of the Government of India forwarding copy of despatch from the Secretary of State sanctioning the grant of a pension of Rs. 250 a month to Miss Pogson on her retirement from active service, and promising a further communication on the subject of the —.

Lib

Order 25 Feby 1898 No 145.

Recorded.

GOVERNMENT OF MADRAS.

PUBLIC DEPARTMENT.

READ—the following paper:—

Endorsement of the Government of India, Department of Revenue and Agriculture (Meteorology), No. 3682—68-5, dated Calcutta, 21st December 1897.

Read—the following despatch from the Right Hon'ble Lord GEORGE HAMILTON, Her Majesty's Secretary of State for India, to His Excellency the Right Honourable the Governor-General of India in Council, dated India Office, London, 4th November 1897, Revenue No. 193:—

With reference to the letter of your Excellency's Government in the Department of Revenue and Agriculture, No. 56, dated 1st September 1897, I have to inform you that the subject of the reorganisation of the Indian Observatories to which it relates is under consideration, and a further despatch will be addressed to you in due course.

2. Meanwhile, in consideration of the circumstance to which you refer in paragraph 8 of your above-mentioned letter, I am prepared to sanction the grant of a pension of Rs. 250 per mensem to Miss Pogson, the Meteorological Reporter to the Madras Government, on her retirement from active service.

Endorsement—No. 3682—68-5, dated 21st December 1897.

Forwarded to the Government of Madras for information, with reference to their letter, No. 1343, dated the 21st December 1896.

(By order.)

(Signed) F. G. SLY,
Under Secy. to the Govt. of India.

ORDER—No. 191, Public, dated 2nd February 1898.

Communicated to the Government Astronomer and to the Meteorological Reporter to Government.

(True Extract.)

for *Chief Secretary.*

To the Government Astronomer.
" Meteorological Reporter to Government.
Copy to the Accountant-General.
" " Pension Department.

Exd. P. Seetharam.

1896.

File No. 11 of 1896.

Serial No. 6.

GOVERNMENT OF INDIA.

DEPARTMENT OF REVENUE AND AGRICULTURE.

METEOROLOGY.

To

THE CHIEF SECRETARY TO THE GOVERNMENT OF MADRAS.

No. 2541 / 11—6.

Dated Simla, the 19th October 1896.

SUBJECT.

Forwards, for consideration, a copy of a letter from the Meteorological Reporter to the Government of India, proposing a scheme for the reorganization of the Indian Observatories.

G. C. Press, Simla.—No. 705 R. & A. D.—21-10-96.—65.

No. $\frac{2541}{11-6}$

FROM

DENZIL IBBETSON, ESQ., C.S.I., C.S.,
Offg. Secretary to the Government of India,

TO

THE CHIEF SECRETARY TO THE GOVERNMENT OF MADRAS.

Dept. of Rev. & Agri.
Meteorology.

Simla, the 19th October 1896.

SIR,

I AM directed to address you in continuation of the correspondence ending with the letter from the Hon'ble Mr. Price, No. 941 (Public), dated 21st November 1893, in which it was said that there was no objection on the part of the Government of Madras to the transfer to the Government of India of the control of the Madras Observatory and of the funds connected with it.

2. Pending the construction of the necessary buildings at Kodaikanal the transfer has not been made. Meanwhile the Government of India have had under consideration a proposal that the Bombay Observatory should also be transferred to Imperial control, and the recent death of the Director of the Colaba Observatory has afforded an opportunity for reorganization. The Meteorological Reporter to the Government of India has accordingly proposed a scheme for the reorganization of the Indian Observatories which I am to forward for the consideration of the Government of Madras.

Vide letter No. 410-S, dated 29th May 1896, from the Meteorological Reporter to the Government of India, enclosed.

3. The arrangement of work now proposed for the three scientific observatories at Bombay, Madras, and Kodaikanal, is set forth in paragraph 34 of the letter from the Meteorological Reporter to the Government of India. The principal change now proposed is the addition of a magnetic survey of India to the work of magnetic observation as hitherto carried on at Colaba. It is proposed to postpone for the present the question of the extension of astronomical work as carried on under Miss. Pogson for many years past at Madras until the value of Kodaikanal as an observing station has been fully tested. If conditions are satisfactory and funds are available, a third Director may eventually be appointed to carry on the astronomical work. It is also proposed to combine the duties of the Meteorological Reporter to the Government of Madras and of the Superintendent of the Astronomical Observatory at Madras and to apply the savings which will result from this combination of appointments to meet the

additional cost of the revised arrangements proposed for the magnetic survey establishment. The meteorological work and time-ball service arrangements at Madras would remain unaltered, but an officer of the Educational or Telegraph Department will be appointed resident half-time Superintendent of the Observatory and will work under the general control of the Director, Kodaikanal Observatory.

4. The ultimate adoption of the scheme will depend upon the advice which the Government of India may receive through the Secretary of State from the Observatories Committee, but as at present advised they are disposed to support it as a well-devised and carefully thought out plan for utilising to the best advantage the money to be spent upon astronomical observations and cognate subjects, and for enabling India to contribute in a fitting manner to the progress of science in these directions. They desire to be favoured with a full expression of the opinion of the Governor in Council and with any suggestions that he may desire to make.

5. It will be observed that the scheme cannot be carried out in its entirety, if Miss Pogson's services are retained, and Mr. Eliot suggests that Miss Pogson should receive a pension in consideration of her meritorious services to Government. A proposal that the appointment should be made pensionable has already been negatived in the Government of India's letter No. $\frac{81}{15-3}$, dated 21st April 1886, and long and meritorious service in a non-pensionable post can give no claim to a pension especially when, as in this case, the fact that the appointment was non-pensionable was taken into account in fixing its emoluments. It may be possible to find employment for Miss Pogson in another department, such as the Educational Department or the Court of Wards, and I am to ask the Madras Government to consider this suggestion. At the same time, considerations personal to Miss Pogson cannot be allowed to prevent a change which on public grounds is desirable.

I have the honour to be,

SIR,

Your most obedient Servant,

DENZIL IBBETSON,

Offg. Secretary to the Govt. of India.

No. 410-S.

FROM

THE METEOROLOGICAL REPORTER TO THE GOVERNMENT OF INDIA,

TO

THE SECRETARY TO THE GOVERNMENT OF INDIA, REVENUE AND AGRICULTURAL DEPARTMENT, SIMLA.

Simla, the 29th May 1896.

SIR,

I have the honour in reply to your No. $\frac{322}{11-3}$ dated 17th February 1896, to submit the following proposals for the improvement of the work of astronomical and magnetical observation in India.

2. There are at present only two observatories at which scientific observations of the highest class in these two branches are carried out, *viz.*,:—

(1) The Madras Astronomical Observatory.

(2) The Bombay or Colaba Magnetical and Meteorological Observatory.

3. *Madras Observatory.*—The Madras Astronomical Observatory was established in 1792, or over a hundred years ago. The chief work of the observatory hitherto has been astronomical. In addition to this, the following subsidiary work has been carried out more or less systematically :—

a. Time determination and giving time signals both locally and to every telegraph office in India and Burma.

b. Meteorological observations (by eye at intervals of a few hours).

c. Magnetical observations for a period of some 25 years between 1840 and 1865.

Large additions were made to the instrumental equipment of the observatory in 1859–66 to bring it up to the then level of astronomical observatories of Europe.

Mr. Pogson was appointed Astronomer in 1861, and he recorded during the next 30 years various series of observations of more or less importance. The work of

preparing the results for publication was for various reasons postponed until 1884, when special arrangements were made in accordance with which Mr. Pogson was to devote himself chiefly to their preparation for the press. At his death in 1892 only a small portion had been published and issued. Mr. Michie Smith was appointed his successor on the understanding that his primary duty was to continue the publication of the results of these Madras astronomical observations.

4. The following is a brief statement of the various important series of observations which were awaiting publication in the year 1884:—

(1) Meteorological and magnetical observations.—

a. Meteorological observations made at the Madras Observatory between the years 1861 and 1890.

b. Hourly magnetical observations made at the Madras Observatory between the years 1856 and 1860.

c. Hourly meteorological observations made at the Madras Observatory between the years 1856 and 1860.

(2) Astronomical observations made by Mr. Pogson—

a. Telegraphic determination of the difference of longitude between Madras and eight other stations.

b. Results of 5,761 observations made with the new meridian circle in the years 1862, 1863 and 1864.

c. Results of 7,651 observations made with the meridian circle in the years 1865, 1866 and 1867.

d. Results of 5,867 observations made with the meridian circle in 1868, 1869 and 1870.

e. Results of 5,603 observations made with the meridian circle in 1871, 1872 and 1873.

f. Results of 4,639 observations made with the meridian circle in 1874, 1875 and 1876.

g. Results of 9,637 observations made with the meridian circle in 1877, 1878 and 1879.

h. Results of 9,267 observations made with the meridian circle in 1880, 1881 and 1882.

i. Results of 4,052 observations made with the meridian circle in 1883 to 1887.

j. Catalogue of over 5,000 stars for the epoch 1875 from observations made with the meridian circle between the years 1862 and 1887.

k. Observations of minor planets, comets, new variable stars and nebulae, furnishing 989 positions of 73 minor planets at 260 oppositions, 75 of 10 comets, those of such variable stars as are not observable with the meridian circle, and of two new nebulae in Ara and Phœnix.

l. Observations of the transit of Mercury, November 12th, 1861; transit of Venus, December 8th, 1874; six eclipses of the sun; seven eclipses of the moon; five occultations of planets, and numerous star occultations between 1862 and 1880. Phenomena of Jupiter's satellites on 193 occasions between 1862 and 1880. Measures of Alpha Centauri, Gamma Virginis, and a few other double stars. Spectroscopic measures of Gamma Argus.

m. Determination of the constant of solar parallax by means of 212 differential measurements of the planet Mars, in Right Ascension, from adjacent comparison stars, made with the equatorials, on 104 evenings near the rising and 108 mornings near the setting of the planet, at its eight oppositions in the years 1862, 1864, 1869, 1871, 1873, 1875, 1877 and 1879.

(3) Astronomical observations of previous astronomers—

(*a*) A quarto volume of about 300 pages, containing certain observations made prior to 1860. They comprise 1,331 of the sun, 345 of the moon, 1,680 of the principal planets, 333 of minor planets, and 25 of Donati's comet of 1858. Also a long list of occultations of planets and stars, and of the eclipses of Jupiter's satellites.

(*b*) Results of observations made with the transit instrument and the mural circle in 1853, 1854,

1855 and 1856, with the deduced catalogues for each year.

(*c*) Results of observations made with the transit instrument and the mural circle in 1857, 1858 and 1859, with the deduced catalogues for each year.

(*d*) Catalogue of about 2,200 stars, for the epoch 1855, from observations made with the transit instrument and mural circle between the years 1853 and 1858.

5. Of these the following have been published up to the present time :—

(A) By Mr. Pogson, the following, designated as 2 (*a*), 2 (*b*), 2 (*c*), and 2 (*d*) in the previous list,—

2 (*a*) Telegraphic determination of the differences of longitude between Madras and eight other stations.

2 (*b*) Results of 5,761 observations made with the meridian circle in the years 1862, 1863 and 1864.

2 (*c*) Results of 7,651 observations made with the meridian circle in the years 1865-67.

2 (*d*) Results of 5,867 observations made with the meridian circle in the years 1868-70.

(B) By Mr. Michie Smith, the following, marked as 1 (*a*), 1 (*c*), 2 (*e*), 2 (*f*), 2 (*g*), 2 (*h*), and 2 (*i*) in the preceding lists—

1 (*a*) Meteorological observations made at the Madras Observatory between the years 1861 and 1890.

1 (*c*) Hourly meteorological observations made at the Madras Observatory between the years 1856 and 1860.

2 (*e*) Results of 5,603 observations made with the meridian circle in the years 1871-73.

2 (*f*) Results of 4,639 observations made with the meridian circle in the years 1874-76.

2 (*g*) Results of 9,637 observations made with the meridian circle in the years 1877-79.

2 (*h*) Results of 9,267 observations made with the meridian circle in the years 1880-82.

2 (*i*) Results of 4,052 observations made with the meridian circle in the years 1883-87.

6. And the following are in preparation by Mr. Michie Smith, and will be shortly issued :—

1 (*b*) Hourly magnetical observations made at the Madras Observatory in the years 1856-60.

2 (*j*) Catalogue of over 5,000 stars for the epoch 1875, from observations made with the meridian circle during the years 1862 to 1887.

7. There hence remain the series marked 2 (*k*), 2 (*l*), 2 (*m*) and 3 (*a*), 3 (*b*), 3 (*c*), and 3 (*d*) to be dealt with, and of these it is very doubtful whether it would be desirable to publish the observations 3 (*a*, *b*, *c*, and *d*), as before doing so it would be necessary to take up the question of the errors, systematic, instrumental, &c., in these old observations.

This would require much time and would probably lead to the conclusion that the observations and their results were not worth the labour their final preparation for publication might entail.

8. Mr. Michie Smith during his recent visit to England consulted the Observatories Committee and astronomical authorities as to the desirability of publishing these observations, and has ascertained their views in the matter. It is probable that a portion of the observations included in 2 (*k*), 2 (*l*), and 2 (*m*) may be of value for certain special astronomical investigations, and he now proposes to have two or three copies of these observations made by hand for loan to any astronomer desiring them for his investigations. They will thus be available for the use of the few specialists who are likely to require them and the heavy cost of their publication will thus be avoided.

9. It is almost certain that Mr. Michie Smith will be able to prepare and issue all the series of observations which it is desirable to print for the information of astronomers before the completion of the Kodaikanal Observatory, more especially if its progress continues at the present slow rate. He also proposes to follow up the publication of the Madras meteorological observations by a discussion of the more important features of the climatology of Madras. This will probably be completed before the end of the year 1897.

10. Mr. Michie Smith, shortly after he took over charge of the observatory, recorded his opinion of its instrumental equipment in the following terms :—

"During the 33 years which have elapsed since the instruments now in use in the

observatory were obtained, astronomy has advanced so rapidly along certain lines that the instrumental equipment is again found very defective. The transit circle is still a thoroughly satisfactory instrument, but its value might be considerably increased by the addition of modern appliances, while for the 'new astronomy,' 'photography,' and 'spectroscopy' there is practically no provision (*vide* Annual Report for 1891, dated 23rd May 1892)."

These remarks indicate that the astronomical equipment at Madras is fairly complete and satisfactory and can be brought up to modern requirements at a comparatively small cost.

11. *Bombay or Colaba Observatory.*—The Bombay Magnetical and Meteorological Observatory was established about 50 years ago. Its scheme of operations was intended to include meteorological, magnetical, tidal and astronomical observations. The work was apparently not carried out satisfactorily, as it was found necessary in 1864 to appoint a committee of enquiry to report on the condition of the observatory and the changes necessary to place it on a proper footing.

12. The Committee presented their report in 1865. The report states that the work of the observatory at that time might be divided into

(1) Astronomical observation.

(2) Tidal observation.

(3) Magnetical observation.

(4) Meteorological observation.

The first was restricted to the determination and communication of correct local time to the Bombay port and shipping. The astronomical equipment consisted at that time (as at present) of one telescope, an old transit instrument, and was hence insufficient to enable astronomical work (other than that of time determination) to be carried out.

The work of tidal observation at Bombay was discontinued shortly afterwards, but was ultimately resumed by the Survey of India.

The magnetical and meteorological instruments were found to be of old patterns and makers, and in a more or less unsatisfactory state.

The Committee also pointed out that the position of the observatory was far from satisfactory. It was quite close to the lines of the Royal Artillery and the firing of the

guns from the various batteries seriously interfered with the working of the delicate magnetical instruments. The committee recommended that the observatory should be removed to a suitable site, and suggested Cotangi Hill near Parel. No action was taken on the recommendation and the observatory occupies the same site at the present time as it did 50 years ago. The objection urged by the committee of the effect of the occasional firing of the heavy guns still holds good, but it would probably be very undesirable to remove the observatory after its long series of observations to a new site and thus introduce a break and a discontinuity into a most valuable series of observations.

13. The chief results of the report of the committee were the appointment of Mr. Charles Chambers as Director and the supply of a complete set of self-recording magnetical and meteorological instruments of the Kew pattern. These instruments were received and brought into use during the period 1870-72, and a continuous series of observations have hence been made with them for a period of about 25 years.

14. It may be noted that the Committee suggested, in accordance with the recommendations and instructions for magnetical observations drawn up by a joint committee of the Royal Society and British Association, that the work of the observatory should include a magnetic survey of the neighbouring districts, the chief object of which would be to ascertain to what extent Bombay represented in its magnetic conditions the surrounding area, and to what extent its observations were affected by purely local conditions. This, so far as I am able to ascertain, has not yet been done, and no steps were taken by Mr. Chambers to carry out this recommendation.

15. Mr. Charles Chambers, F. R. S., was Director of the observatory from 1865 to the time of his death in 1896, or for nearly 31 years.

Annual reports were published during the whole of this period giving a full summary of the magnetical and meteorological observations of each year. The report for the year 1894 was issued in 1895 and that for the year 1895 is ready for issue.

16. Mr. Chambers published a large number of valuable scientific memoirs based on the magnetical and meteorological observations recorded at Bombay. The following are the more important, published at the cost or under the authority of the Government of Bombay :—

(1) On the solar variations of Magnetic Declination at Bombay. Phil. Trans., 1869, pages 363-386.

(2) The absolute direction and intensity of the Earth's Magnetic Force at Bombay. Phil. Trans., 1872, pages 75 to 90.

(3) The Normal Winds of Bombay, given as Appendix I to Bombay Magnetical and Meteorological Observations, 1865-70, pages 199-212. Bombay, 1872.

(4) On the lunar variations of Magnetic Declination at Bombay, given as Appendix III to Bombay Magnetical and Meteorological Observations, 1865-70, pages 235-242. Bombay, 1872.

(5) Meteorology of the Bombay Presidency, 1 vol. 4to, pages 1 to 295, and 1 portfolio of 82 diagrams, &c. Eyre and Spottiswoode, London, 1878.

(6) Notes on a comparison of two unifilar magnetometers, and on magnetic induction as affecting observations of the intensity of the Horizontal Magnetic Force, given as an appendix to Bombay Magnetical and Meteorological Observations, 1871-78, pages (53) to (60). Bombay, 1881.

(7) Bombay Magnetical and Meteorological Observations, 1864 to 1894.

(8) Introductions and Compilations, 14 vols. 4to. Bombay, 1867 to 1895.

(9) Appendices to Bombay Magnetical and Meteorological Observations, 1879-82, 1 vol. 4to—*viz.*

Appendix I.—History of the set of magnetographs established at the Colaba Observatory, with a new theory of the Vertical Force Magnetometer, pages [1] to [83].

Appendix II.—On the solar and lunar variations of Magnetic Declination at Bombay in the years 1846 to 1872, pages [84] to [137].

Appendix III.—On the solar and lunar variations of the Earth's Magnetic Force at Bombay in the years 1847 to 1872, pages [138] to [193].

Appendix IV.—The solar diurnal variations of Declination, Horizontal Force, and Vertical Force at Bombay, as derived from the registrations of the Colaba Magnetographs, pages [194] to [235].

Appendix V.—Influence of height above or below the ground level upon the diurnal variations of Declination and Horizontal Force, pages [236] to [241].

(10) Diurnal variation of Declination and of Horizontal Force for each month and year of the years 1865 to 1872, deduced from the readings of Grubb's Declination Magnetometer and of Grubb's Horizontal Force Magnetometer, given as an appendix to Bombay Magnetical and Meteorological Observations, 1884, pages [1] to [16.]

(11) Appendices to Bombay Magnetical and Meteorological Observations, 1886—*viz:*

Appendix I.—On the luni-solar variations of Magnetic Declination and Horizontal Force at Bombay, and of Declination at Trevandrum.

Appendix II.—Luni-solar variation of Magnetic Declination at Batavia, and references to later extensions of the investigations of the preceding paper.

Appendix III.—On the influence of temperature upon the Bifilar Magnetometer.

Appendix IV.—Effect of heating the magnetograph room on the scale-co-efficient of the Vertical Force Magnetograph.

Appendix V.—Temperature coefficient of the Vertical Force Magnetograph.

Appendix VI.—Temperature coefficient of the Horizontal Force Magnetograph.

(12) Appendices to Bombay Magnetical and Meteorological Observations, 1888-89, 1 volume 4 to—*viz:*

Appendix I.—History of the set of Magnetographs established at the Colaba Observatory, Bombay.

Appendix II.—The solar diurnal variation of Declination, Horizontal Force and Vertical Force at Bombay, as derived from the registrations of the Colaba Magnetographs.

(13) Appendix to Bombay Magnetical and Meteorological Observations, 1890, containing a memoir on the Absolute Magnetic Declination and Horizontal Force at Bombay and their secular and annual variations.

(14) Appendix to Bombay Magnetical and Meteorological Observations, 1891-92, a

volume 4to, containing a memoir on the secular variation of Magnetic Dip at Bombay during the years 1867 to 1892.

In addition, the following papers have been published in the transactions of certain scientific societies.

(15) "On the variation of the daily range of atmospheric temperature," and "On the variation of the daily range of the magnetic declination at Bombay." Roy. Soc. Proc. Vol. XXXIV, pages 231-264.

(16) Examples of the application of a modified form of Sabine's method of reduction of hourly observations of Magnetic Declination and Horizontal Force to a single quarter's registrations of the Magnetographs at the Colaba Observatory, Bombay, to accompany the second report of the Committee appointed for the purpose of considering the best means of comparing and reducing magnetic observations. Published in the British Association Report for 1886.

(17) Luni-solar variation of the vertical magnetic force at Bombay for the single quarter, November 1875 to January 1876, to accompany the third report of the Committee appointed for the purpose of considering the best means of comparing and reducing magnetic observations. Published in the British Association Report for 1887.

(18) On the mathematical expression of observations of complex periodical phenomena, and on planetary influence on the Earth's Magnetism. Phil. Trans., Vol. 165, pages 361-402 (by C. and F. Chambers).

17. The magnetical observations recorded at Colaba during the past 30 years have been more or less fully dealt with by Mr. Chambers in the various published papers enumerated above.

The present Director, Mr. Moos, has informed me that he ascertained from enquiries he made in the office of the Colaba Observatory that Mr. Chambers had no discussion in hand at the time of his death. The last memoir he prepared was in 1892, "On the variation of the dip at Bombay." and numbered (14) above.

18. The hourly meteorological observations for the years 1872-95 derived from measurements of the photographic traces of the barograph and thermograph have been fully tabulated and await discussion. It would be very desirable that they should be taken up shortly and the meteorology of Bombay be fully worked out from this long series of observations.

19. By an arrangement with the Port Trust the observatory drops two time-balls, one at noon at the Port Trust office and the other at 1 P.M. at Prince's Dock, giving mean local time to the port and shipping.

The following history of the arrangements for the communication of mean local time has been sent to me by the Director, Mr. Moos.

"From the very first this observatory had the charge of the time communication to the harbour. The ball tower was originally located at the observatory, but in 1865 the Harbour and Pilotage Board, under whose direction the Time Communication office was placed, considered that the site of the ball tower was unsuitable and suggested the removal of the ball to the Castle. In January 1867, signalling was commenced at the new site and the ball-dropping at this observatory was discontinued. In 1873 the Port Trust was formed and the Harbour and Pilotage Board ceased to exist—the rights and duties of the latter vesting in the Port Trustees. Under this arrangement the Time Communication office was placed under the Port Trustees and Mr. Chambers first began to draw his Rs. 150 for superintending this work from the Port Trustees in 1873. This arrangement has been in force up to now."

The previous paragraphs give a statement of the work carried out hitherto at the Madras and Bombay Observatories.

20. *Defects in programme of work of Indian scientific observatories.*—The programme of work as stated above is defective in two very important respects:—

(1) There is no provision, instrumental or observational, at Madras for the classes of observations included under the terms "New astronomy" "Astronomical physics," and "Solar physics."

(2) There is no provision at the Bombay Observatory for the determination of the more important features of the intensity and direction of the force due to terrestrial magnetism in different parts of India, or in other words for a magnetic survey of India.

21. *Proposed extension of work.*—With respect to the first defect, the Secretary of State has fully recognized the desirability of India co-operating in the important class of observations comprised under the subject of "Solar physics," and has sanctioned the erection of a suitable observatory at Kodaikanal on the Palni hills

in Southern India, where the climatic and atmospheric conditions are believed to be specially favourable to this class of observation, and has also sanctioned the necessary instrumental equipment and staff.

22. It appears to be remarkable that the Government of India, which has for many years maintained the large and important Trigonometrical and Geological Surveys of India, should have taken no steps towards the execution of a magnetic survey of India. The importance from a practical standpoint of as accurate a knowledge as possible of the magnetic elements, more especially declination, and of their variations, periodic and secular, and the determination of their causes, is almost self-evident. A knowledge of the actual magnetic conditions of as large an area of the earth's surface as possible is required not merely for practical purposes, but for testing the various theories advanced to account for the phenomena of terrestrial magnetism. Up to the present time such surveys have been made of the greater part of Europe and a portion of North America and Japan. I believe a survey of a large tropical area like India is greatly desired by scientists in Europe. Such a magnetic survey was attempted by the brothers Schlagenweit in the years 1854-58, the results of which were published in their work, "Results of a Scientific Mission to India and High Asia." The brothers Schlagenweit received a considerable grant-in-aid from the East India Company and assistance in various ways from the Company's officers. The mission was, however, throughout a private and not a Government one. I have not met with any statement as to the value of that survey and have no copy of their book, and am hence unable to offer any opinion on the scientific value of their results. As it is, however, nearly forty years since the survey was made, it is almost certain that a general magnetic survey of India would be of much scientific and practical value and would furnish results that would be of great use in the discussion of the distribution of the earth's magnetism and its secular variations, and it is also possible that a comparison of the results of such a survey with those of the Schlangenweit mission might lead to interesting results respecting the secular variations of the earth's magnetism.

23. The Observatories Committee should be consulted on this point. I may, however, for the information of the Government of India, state what has been done in the British Isles in the matter. In all, three magnetic surveys have been made. The

first was made in 1834-38, the second in 1857-62, and the third in 1884-88. The last of these surveys was made because the earlier surveys were not satisfactory with regard to the distribution and number of the stations and in order that the secular changes might be redetermined. It was based on observations recorded at 250 stations. The memoir of Rücker and Thorpe based on this survey is a most valuable contribution to the knowledge of terrestrial magnetism. It contains charts showing terrestrial isomagnetic lines in which all the disturbances or distortions due to local magnetism are neglected, and also charts, in which the true lines are given showing all disturbances, local and regional. A very interesting feature of the investigation is the relation between the magnetic and geological constitution of the magnetic districts of the British Isles. It is hence probable that a magnetic survey of India might furnish results of great interest to the Geological Survey Department, and it would hence be advisable to consult that Department on the subject.

24. In a recent article in a scientific paper dealing with the great importance of magnetic observations it is stated—"We have now heavily-armed protected steel cruisers steaming over the whole world with less change of deviation of the compass than the wood-built *Erebus* and *Terror* of Ross's Antartic Expedition; and this remarkable result could not have been effected if the terrestrial magnetic observer had not done his work. Still much more remains to be done before sufficient is known about the secular changes of terrestrial magnetism to enable magnetic charts to be provided to navigators for years in advance, just as the tides can now be tabulated for use." Perhaps the Admiralty or Board of Trade might be asked if the magnetic survey proposed is desirable from the standpoint indicated in these remarks.

25. *Future programme of work.*—If the extensions of work suggested above be adopted, the complete programme of the work of the scientific observatories under the Government of India would hence be—

(1) Astronomical observation and discussion, including

(*a*) Meridian and extra-meridian observations,

(*b*) Spectroscopic observations,

(*c*) Solar photography;

(*d*) Stellar Photography.

(2) Magnetical, including

(*a*) Special and accurate registration of all magnetic changes at Bombay,

(*b*) General magnetic survey of India;

(3) Time determination and time signals;

(4) Meteorological (special) by autographic methods, including atmospheric electricity.

If the whole of this programme is to be carried out economically and at the same time effectively, it will be desirable to redistribute and modify the work of the observatories at Madras and Bombay to some extent, and to extend the field of work as hitherto proposed for Kodaikanal and sanctioned by the Secretary of State.

26. *Necessary changes of staff to carry out proposed programme.*—The work of scientific observatories, such as those of Bombay and Madras, usually includes—

(1) Actual observation and the reduction and tabulation of the observations for permanent record and discussion, and hence demands a competent staff of observers.

(2) Immediate superintendence and control of the work of observation by an officer thoroughly trained in the mechanical and technical knowledge and practice of the special class or classes of instruments in use at the observatory.

(3) The general direction of the work of observation and the discussion and publication of the observations without unnecessary delay, so that the results of the work may be available to all scientific workers, and hence contribute to the general progress of knowledge in that branch of science.

27. The observing, computing, and clerical staff at the Bombay and also at the Madras Observatory consists solely of natives of India who carry out the duties named in paragraph (1) above. The second and third duties named above at each of these observatories have been hitherto performed by two European scientists, one for each observatory. There is, however, no necessary connection between the duties of (2) and those of (3). The proper performance of the latter—*i.e.*, (3)—usually requires an officer of much higher

scientific attainments than of those numbered (2). It would evidently be an advantage and an economy, if there be sufficient work of the highest class to occupy an officer fully, to assign the duties of (2) to a half-time officer of the necessary scientific attainments. The professors of physical science at the larger colleges in Madras and Bombay would, for example, be fully qualified to act as Superintendents of the observatories at these two places.

28. If this change were approved and adopted it would still be necessary to have European experts whose chief work would be to superintend generally the work of observation, to carry out the necessary changes in the methods and in the instruments so as to maintain the work of observation at the level demanded by the advances, theoretical and instrumental, in their branch of science, and finally to discuss the observations. It would evidently be advisable to place such officers in a climate most suited for hard and effective brain-work, and in immediate connection with a large observatory and a scientific library, &c., and this could be most satisfactorily obtained by locating them at Kodaikanal.

29. The previous remarks indicate that it would be desirable in future to place the observatories at Madras and Bombay under the charge of half-time officers. The Superintendents would have free quarters in the observatories, and would be in charge of the actual work of observation and see that the observers carried out their work fully and satisfactorily. Each of these observatories would be placed under the general charge of a Director who would be stationed at Kodaikanal, and who would occasionally visit the observatory under his control and direct and modify the work in accordance with the general scheme of observations for which the observatory is maintained by the Government and on the lines laid down and suggestions made by the Observatories Committee.

30. These changes if carried out would locate the two scientific officers (hitherto stationed at Madras and Bombay) at Kodaikanal. One of these officers would direct and carry on the work of solar physics observations (*i.e.*, spectroscopic observations and solar photography) at Kodaikanal, and the other would carry out the magnetic survey of India. It would be necessary to provide each of these officers with a competent staff to carry on the observational work assigned to him fully and to assist in the tabulation and computation of the data required for their scientific discussions and investigations.

31. The work of the extended Kodaikanal Observatory as now proposed would hence include:—

(1) Solar physics observations,

(2) Magnetical observations,

(3) Meteorological observations,

and the full scientific discussion of the astronomical and magnetical observations taken at the observatories under the control of the two Directors.

32. The question of the extension of the work of astronomical observation and of the locality at which it should be carried out will almost certainly require consideration in the course of a few years. There are undoubtedly certain special classes of astronomical observation which can only be carried out by or under the immediate superintendence of a trained astronomer, and which also demand the very highest and most satisfactory atmospheric conditions. All this part of the work of astronomical observation should undoubtedly be performed at Kodaikanal and not at Madras. It would probably, however, not be expedient to commence any astronomical work on the large scale at either Madras or Kodaikanal for some years yet, and in fact until the Solar Physics Observatory has been satisfactorily established on a permanent footing. The question of the desirability of appointing a third officer, an astronomer, might then be taken up. The astronomical work at Madras during the next four years would, if this suggestion be adopted, be very limited in amount.

33. It may be noted here that I consider it absolutely essential the Colaba Observatory should be maintained as hitherto, and that the magnetic and meteorological observations should be recorded to the same extent and by the same methods as hitherto. In fact, according to these proposals, there would be no decrease in the amount of the observational work at Colaba, or in the tabulation of the recorded observations. The only changes would be the substitution of a resident Superintendent under the charge of a Director at Kodaikanal for a resident Director. Similarly there would be no change in the work of time determination or of meteorological observation at Madras. But, as at Bombay, the work would be carried out under the supervision of a resident Superintendent subject to the general control of a Director at Kodaikanal instead of under the supervision of a resident Astronomer.

34. Bearing these facts in mind, the following is the arrangement of work now

proposed for the three scientific observatories at Bombay, Madras and Kodaikanal:—

(1) *Bombay.*—Magnetical and meteorological observations as hitherto (and with any further improvements and extensions suggested by the new Director and approved by the Observatories Committee) and the working of the local time ball dropping arrangements. The observatory to be under the immediate charge of a Superintendent and under the general control of the Director of the Magnetic Survey of India (stationed at Kodaikanal).

(2) *Madras.*—Meteorological observations as at present, the working of the local time ball service arrangements, the distribution of time signals throughout India, and the preparation and issue of the Madras Daily Weather Report. The Madras Observatory to be placed under the immediate charge of a Superintendent and under the general charge of the Director, Solar Physics Observatory, Kodaikanal.

(3) *Kodaikanal.*—Solar physics observations and discussion of these observations and any special astronomical of observations it may be considered desirable to take at Madras by the Director and staff of the Solar Physics Observatory; the magnetic survey of India and meteorological observations by the Director of the Magnetic, survey of India, and a special staff of observers and assistants to carry on the work of taking, recording, and discussing the various series of magnetical observations made at Kodaikanal, Bombay, or on tour of survey.

35. *Collateral minor advantages of proposed changes.*—It may be pointed out that there would be several minor collateral advantages derived from the location of the two Directors of the scientific observatories in India at Kodaikanal.

36. The observatories at Bombay and Madras have undoubtedly done admirable work during the past, and the Provincial Governments have taken great interest in their progress and contributed very materially towards their efficiency. These institutions have, however, been from the first Imperial rather than Provincial institutions, and are recognised as such by foreign countries and scientists in England. It would be

desirable to take the present opportunity of placing them under the immediate control of the Government of India, and thus converting them into Imperial institutions in name as well as in fact. The Madras Government has agreed fully to the transfer of the Madras Observatory (*vide* Government of Madras, letter No. 941, Public, of the 21st November 1893), and the Bombay Government is also prepared to transfer the Colaba Observatory. It may be pointed out that if the changes proposed for the Colaba Observatory be approved and sanctioned it will be absolutely necessary to transfer the Colaba Observatory to the Government of India. It would be impossible that the Directors of the Imperial Observatory at Kodaikanal and working under the immediate orders of the Government of India should direct and control observatories at Madras or Bombay subject to the orders of the Local Governments.

37. The combination of the India scientific observatories under the Government of India will enable them to be interlinked and treated as components of a general system, each dealing with special features of the same general subject of investigation. The subjects of their investigations are cognate, and it is evident that, in order to make the whole work as effective as possible, they should work in sympathy and co-operation with each other and under the same ultimate control.

38. This is especially desirable in India, where scientific workers are isolated and have none of that personal intercourse with co-workers which forms so valuable a feature of scientific life in England. It may also be pointed out that co-operation of this kind would undoubtedly improve the character of the scientific work at each observatory. There are reasons for believing there may be relations between sunspots and other features of the sun and the magnetism of the earth. Astronomical physics (including solar physics) again is naturally regarded as a part of astronomy. It would hence appear to be desirable that the various observatories carrying on these different classes or kinds of observations should not only co-operate, but that they should, in India at least, be located, so far as possible, near each other, so that the results of one class of observation might be immediately available for guidance and information in another branch. Progress in one department under such conditions would almost certainly suggest fields for investigation in another department, which, if followed out, would

undoubtedly contribute to the progress of knowledge in both departments.

39. The location of both Directors at Kodaikanal would enable leave arrangements to be made with little difficulty, as either Director would be able to superintend generally the office and observational work of the other Director when the latter went on leave. Hitherto it has been practically impossible to make satisfactory arrangements for the absence of the Madras Astronomer on furlough; and I believe it was in some part due to Mr. Pogson's not being able to take leave during the latter part of his service that he broke down in health completely before he could retire.

40. This arrangement would place both Directors in a suitable climate for hard intellectual work, and hence probably enable them to do better and more sustained work than in the enervating climates of Bombay and Madras. And as the chief value of these officers lies in their scientific investigations, it appears to be the most prudent and economical plan to place them in the best climate compatible with the full performance of their scientific and directorial duties in India.

41. It may also be pointed out that it is extremely desirable the Directors should be able to take frequent leave to Europe and ascertain by personal investigation the directions of progress, instrumental and otherwise, in the various subjects in which they are interested. They should hence in my opinion be encouraged to take occasional leave at fairly regular intervals, and the arrangements at the Kodaikanal Observatory should be such as to enable this to be done without in any way interfering with the current observational work of the observatory.

42. *Amalgamation of Madras Observatory and Meteorological Office.*—It would be very desirable to take this opportunity of transferring the meteorological office to the observatory and of combining the duties of the Meteorological Reporter to the Government of Madras and of the Superintendent of the observatory. The doubling up of the two appointments will result in certain economies and enable the Government, out of savings effected by the transfer, to remedy a grievance under which the present holder of the Madras meteorological appointment, Miss Pogson, labours. Miss Pogson was appointed Assistant Astronomer by the Secretary of State, and was, so long as she held that appointment, entitled to the ordinary benefits of furlough, pension, &c. She was in 1876 appointed Meteorological

Reporter to the Government of Madras, a non-pensionable post, and in 1881, her father, the Government Astronomer, transferred the Assistant Astronomer-ship from his daughter to his wife. By this series of changes Miss Pogson has lost all claims to pension. After 23 years of service her health is giving way, but she is unable to take furlough as she has not been able to save anything. The present arrangement is expensive and also not satisfactory, as Miss Pogson must continue to work in declining health until she is compelled by the doctor's order to take sick leave. The arrangement has also, in other respects, not been altogether satisfactory, and it would, I am confident, be best to terminate it now by offering Miss Pogson compensation pension and placing the Meteorological Reportership at Madras on the same footing in every respect as at Calcutta, Bombay, and Allahabad,—*viz.*, a half-time appointment held by an Educational or Telegraph officer.

43. I talked the matter over with Miss Pogson during a recent visit to Madras and she is willing to retire if she be granted a moderate pension. If she were granted a compensation pension it would remove a grievance which she has already brought twice before the Government of India, and which, I believe she is trying to induce the Government of Madras to bring up again.

44. It will also remove the one anomaly in the Provincial meteorological appointments and enable proper leave arrangements to be made in future at Madras, which it is hardly possible to do at present. This is very necessary, as the publication of the Madras Daily Weather Report requires that the officer in charge of the Meteorological work should always be present in Madras.

45. *Control.*—The Secretary of State in the year 1895 appointed an "Observatories Committee" to which all questions and matters relating to the scientific methods and work of the Madras and Bombay observatories should be submitted for opinion and advice. The continuation of this system will evidently secure the full scientific control of the Indian Imperial observatories and also tend to keep them up to the standard of European observatories of similar character.

The control of large national observatories as those of Bombay and Madras is partly administrative and partly directorial. If the proposal for the transfer of the Colaba Observatory to the Government of India be accepted, the administrative control of the Indian observatories can be carried out directly by the Government of India, but it would not be possible for the Government to control and guide properly the scientific work or these observatories. The system initiated some years ago for the direction and criticism of the scientific work of these observatories by the "Observatories Committee" in London is undoubtedly the best that can be devised under the special circumstances and should hence be continued and if possible the advice of that Committee should be utilized to an even greater extent than hitherto.

46. It would probably be desirable to place the senior Director at Kodaikanal in administrative charge of the Kodaikanal Observatory. The two Directors should be absolutely independent of each other in their scientific work, but all correspondence with the Government of India should pass through the senior Director and he should have the general control and administrative management of the observatory.

47. *Financial.*—As already stated, the Secretary of State has sanctioned the following charges for the Madras observatory and the Kodaikanal Solar Physics observatory in his despatch No. 117 (Revenue), dated the 31st August 1893:—

	Rs.	A.	P.
1 Director, Solar Physics Observatory, and Superintendent, Kodaikanal Observatory ...	800	0	0
1 Assistant Superintendent, Madras Observatory (local allowance) ...	100	0	0
Madras Observatory.			
1 Clerk for Time and Meteorological Observations ...	60	0	0
1 Clerk for Time and Meteorological Observations ...	40	0	0
1 Clerk for preparation of volumes of observations	100	0	0
1 Clerk for preparation of volumes of observations	80	0	0
Solar Physics Observatory.			
1 First Observer (or assistant) on Rs. 200—300 ...	275	0	0
1 Second Observer (or assistant) on Rs. 100—150 ...	137	8	0
1 Third Observer (or assistant) on Rs. 50—75 ...	68	12	0
2 Menial Assistants, Rs. 15—25	45	0	0
1 Writer, Rs. 30—50 ...	45	0	0
2 Head peons at Rs. 10 each	20	0	0
4 Peons at Rs. 8 each ...	32	0	0
4 Lascars at Rs. 7 each ...	28	0	0
TOTAL ...	1,831	4	0

48. Mr. Michie Smith wishes to make one or two slight changes in this, and hence I embody them in the present scheme. In the first place he considers that it will be absolutely necessary to have a good mechanic for the Kodaikanal Observatory to make any repairs or slight changes in the instruments, &c., that may be necessary, more especially as it would probably not be possible, except under rare circumstances, to obtain one at that hill station. In order to obtain the kind of mechanic required it will be necessary to fix his wages at Rs. 40 per mensem. Also it will be necessary to pay the peons somewhat more at Kodaikanal than at Madras. In order to obtain the Rs. 10 per mensem required to increase their pay, and the Rs. 40 per mensem for the pay of the mechanic, he proposes to decrease the pay of the first assistant by Rs. 50. He feels he will have no difficulty in obtaining a man of the stamp required at the lower rate. He also proposes to transfer the clerk on Rs. 80 per mensem engaged hitherto at Madras in the preparation of the volume of observations to Kodaikanal as an extra assistant, and to utilize the clerk on Rs. 100 per mensem, engaged at present on the same work, as computer and head clerk in charge of the office work of the Madras observatory. The following is the readjusted establishment for the Madras observatory and Kodaikanal Solar Physics Observatory, as now proposed :—

Kodaikanal Solar Physics Department.

	Rs.	A.	P.
Director	800	0	0
First Assistant, Rs. 150 to 250	225	0	0
Second Assistant, Rs. 100 to 150	137	8	0
Third Assistant, Rs. 65 to 85,	80	0	0
Fourth „ „ 50 to 75,	68	12	0
Mechanic	40	0	0
2 Menial Assistants, Rs. 15 to 25	45	0	0
Writer, Rs. 30 to 50 ...	45	0	0
1 Head peon, Rs. 12 ...	12	0	0
2 Peons, „ 10 ...	20	0	0
1 „ „ 9 ...	9	0	0
2 Lascars „ 8-8 ...	17	0	0
TOTAL ...	1,499	4	0

Madras Astronomical Office (Time Ball, &c., Branch).

	Rs.	A.	P.
Superintendent	100 (with free quarters.)	0	0
Computer	100	0	0
First Assistant	60	0	0
Second „	40	0	0
Head peon	10	0	0
Peon	8	0	0
2 Lascars	14	0	0
TOTAL ...	332	0	0

The total cost of the establishment of both Departments is Rs. 1,831-4-0 and the same in amount as sanctioned by the Secretary of State.

In addition there is sanctioned for contingencies an annual amount of Rs. 2,024. *Vide* despatch of Secretary of State.

49. The present sanctioned establishment and pay of the Madras Meteorological Office is as follows :—

	Paid out of Budget grant of India Meteorological Depatment. Rs.	A.	P.	Paid out of contribution of Madras Government made to India Meteorological Department towards the publication of the Daily Weather Report. Rs.	A.	P.
Reporter ...	300	0	0	100	0	0
First Assistant Rs. 60 to 80 ...	75	0	0	15	0	0
Second Assitant Rs. 40 to 55 ...	51	4	0	10	0	0
Third Assistant Rs. 30 to 40 ...	37	8	0	5	0	0
First Draftsman				50	0	0
Second „				30	0	0
Signaller				22	8	0
Litho Printer				12	0	0
Pressman				8	0	0
Do.				7	0	0
1 Peon				10	0	0
2 Peons				9	0	0
3 Peons ...	16	0	0	8	0	0
Total ...	479	12	0	286	8	0

In addition the following payments are made directly by the Madras Government,

chiefly on account of Miss Pogson being in charge of the rainfall registration of the Presidency—

	Rs.	A.	P.
Allowance to Miss Pogson ...	150	0	0
Clerk engaged to tabulate rainfall on Rs. 20 to 30 ...	27	8	0
Rent of Office and Reporter's quarters	100	0	0
Total ...	277	8	0

The present total cost of the Madras Meteorological Office exclusive of contingent charges is as follows :—

	Rs.	A.	P.
Paid out of Budget grant of India Meteorological Department	479	12	0
Paid by contribution of Madras Government made to India Meteorological Department for the publication of the Daily Weather Report ...	286	8	0
Paid directly by Madras Provincial Government on account of rainfall registration	277	8	0
Total ...	1,043	12	0

The postage charges and contingencies of the Madras Meteorological office are paid from the Budget Grant of the India Meteorological Department and at the present time average Rs. 100 per mensem, including the postage of the Madras Daily Weather Report.

As shown by the statement, the total expenditure is Rs. 1,043-12 per mensem of which nearly half is met from Imperial funds, and the balance *viz* Rs. 564 per mensem is paid by the Government of Madras. A portion of this amount *viz.* Rs. 286-8-0 is met from the contribution of that government to the Budget grant of the Meteorological Department and the balance Rs. 286-8-0, from provincial funds.

50. If these amounts were consolidated and all were available for the readjustment of establishment, I would propose that Miss Pogson, the present holder of the appointment of Meteorological Reporter to the Government of Madras, should be pensioned off, and would suggest a pension of Rs. 250 per mensem, which is practically thirty-sixtieths of her present pay and allowances, the ordinary pension grant allowed by the rules after the 25 years' service that she will have probably served before these changes take effect.

51. The work done by her office now consists almost solely of—

(1) The preparation of the Daily Weather Report.

(2) The supervision of the Madras rainfall registration and preparation of the monthly rainfall statement.

The office should on her retirement be transferred to the astronomical observatory, where there will be sufficient room for it after the reduction of establishment to be effected at the Madras Observatory when the Kodaikanal Observatory is opened. The Superintendent of the observatory (if an Educational officer) would have no difficulty in arranging for the performance of the work and should be paid Rs. 200 per mensem in addition to his pay as Superintendent, making a total of Rs. 300 per mensem with free quarters at the observatory. The establishment is larger than is necessary for the work that has to be done and might be slightly reduced.

52. The following would be the cost of the readjusted staff :—

	Rs.	A.	P.
Allowance to Superintendent, Madras Astronomical Observatory	200	0	0
First Assistant, Rs. 55 to 70	66	4	0
Second ,, ,, 40 to 50	47	8	0
Rain Clerk	32	8	0
Draftsman	50	0	0
2nd Draftsman	30	0	0
Signaller	22	8	0
Litho Printer, 12 to 20 ...	18	0	0
Pressman	15	0	0
5 Peons	43	0	0
	524	12	0

which with Miss Pogson's pension of Rs. 250 per mensem would give a total monthly expenditure, of Rs. 774-12-0. In the preceding, the first and second assistants and the rainfall clerks are retained on their present pay together with the amounts of the local allowances hitherto given to the first, second and third assistants. I have also slightly increased the pay of Litho. Printer, substituting a graded pay of Rs. 12 rising to Rs. 20 by yearly instalments of say Rs. 2, as it is extremely desirable to give him some inducement to remain as lithographic printer for the Daily Weather Report. A total saving of Rs. 269 per mensem would hence be effected

by these changes and be available for the increased expenditure necessitated by the changes proposed in connection with the Bombay Magnetical Observatory the cost of which is given below in paras. 55-6.

53. The following gives a summary of the preceding changes in connection with the Madras Astronomical and Meteorological Office.

Present sanctioned Expenditure—

	Rs.	A.
Establishment, Madras and Kodaikanal Solar Physics Observatory	1,831	4
Establishment—		
Madras Meteorological Office ...	1,043	12
Contingencies—		
Madras Observatory and Kodaikanal	168	12
Madras Meteorological Office ...	100	0
Total ...	3,143	12

Proposed Expenditure—

Establishment, Kodaikanal Solar Physics	1,499	4
Ditto, Madras Astronomical Observatory	332	0
Ditto, Madras Meteorological	524	12
Pension to Miss Pogson ...	250	0
Contingencies, Madras and Kodaikanal	268	12
Total ...	2,874	12

The difference between the two totals above (*viz.* Rs. 269) represents the monthly saving in the present sanctioned expenditure which will be effected by carrying out the changes in the Madras Meteorological Office as proposed.

It may further be pointed out that if Miss Pogson be not pensioned off, it would hardly be possible to dismiss her in order to effect these changes as she has performed her duties satisfactorily.

54. It should perhaps be noted that if the Meteorological Office be transferred to the Astronomical Observatory, as proposed above, the meteorological work of the Superintendent of the Astronomical Observatory and Meteorological Reporter would be directly under the Meteorological Department, and the contingent expenditure, &c., would be met from the budget grant of the Meteorological Department as before.

55. The following is a statement of the present expenditure of the Colaba Observatory :—

		Pay. Rs.	Allowance from Port Trust funds. Rs.
Director ...		700 (with free quarters).	150
Magnetical Department—			
First Assistant ...		105	...
Second Assistant ...		60	...
First Observer ...		40	...
Second Observer ...		40	...
Third Observer ...		40	...
Computer ...		30	...
		Pay. Rs.	Allowance from Port Trust fund. Rs.
Astronomical Department—			
First Assistant ...		80	25
Second Assistant ...		50	...
Time Ball Establishment—			
First Assistant ...			100 (including Rs. 20 for carriage allowance).
Second Assistant ...			20
5 peons (one on Rs. 10 and four on Rs. 8)		42	
Total ...		1,187	295
Contingencies, monthly about ...		150	...

The total monthly expenditure is hence Rs. 1,632 of which Rs. 295 is paid from Port Trust Funds, according to permanent arrangements, and Rs. 1,337 by the Government.

56. It would probably effect some savings if the Bombay Meteorological Office were removed to the Colaba Observatory and the Superintendent or Assistant Director appointed Meteorological Reporter for Western India, thus making similar arrangements at Bombay as at Madras for the publication of the provincial weather reports. I am not, however, prepared to advise this change at present, as the arrangements in force enable the Daily Weather Report to be published and issued to subscribers probably two hours earlier than would be possible if the office were removed from its central position in the commercial part of Bombay to the Colaba Observatory three miles away. The present arrangements have worked most satisfactorily and it would be a mistake to disturb them, as a delay of two hours in the publication of the Daily Weather Reports would undoubtedly diminish their value considerably to subscribers and probably give rise to strong complaints.

57. As already stated, it is proposed to carry on the work of magnetical and meteorological observations and time determination exactly as hitherto, but to place the observatory under the immediate charge of a Superintendent or Assistant Director, subject to the general control of the Director of the Magnetic Survey of India at Kodaikanal. It will hence be necessary to maintain at Colaba a staff sufficiently large to carry on the whole of the work of observation as fully as hitherto and to tabulate the observations (the first stage in the work of discussing the observations) and also to carry on the time ball work satisfactorily.

58. The following would, I think, be found sufficient to perform the whole of the work satisfactorily :—

	From Imperial Funds. Rs.	From Port Trust. Rs.
Superintendent ...	100 (with free quarters).	150
Magnetical and Meteorological Department—		
First Assistant ...	105	...
Second Assistant ...	60	...
First Observer ...	40	...
Second Observer ...	40	...
Third Observer ...	40	...
Time Ball—		
First Assistant ...	*80	25
Second Assistant ...	...	100
Third Assistant	...	20
TOTAL ...	465	295

The Director of Magnetic Surveys would be stationed at Kodaikanal, and it would be necessary to provide him with a small staff of assistants in his office for the Magnetic survey work and to assist him in his calculations and scientific investigations.

The following would probably be sufficient provision (more especially considering the remarks in the foot-note) :—

	Rs.
Director, 600—800 ...	733⅓
First Assistant, 120—180 ...	165
Second ditto, 50—70 ...	65
Third ditto, 30—50 ...	45
Peon	12
Peon	10
TOTAL ...	1,030⅓

* The staff is probably larger than is necessary for the full performance of the observation and tabulation work, but the First Assistants in the magnetical and astronomical departments are exceptionally useful men and well acquainted with the mathematical methods of treating magnetical observations, and might hence for some years be assigned a part at least of the computation work required by the Director.

59. The following sums up the financial effects of these changes in the Colaba observatory :—

	Rs.
Present sanctioned Expenditure—	
Establishment, Colaba ...	1,187
Contingencies	150
TOTAL ...	1,337
Proposed Expenditure—	
Establishment, Colaba ...	465
Ditto, Kodaikanal	1,030⅓
Contingencies	150
TOTAL ...	1,645⅓

The additional cost of the proposed arrangements for the Colaba observatory and Magnetic Survey of India would hence be 308⅓. This would be reduced to Rs. 39 per mensem, if the changes proposed in the Madras system were effected and the savings were allowed to be utilized.

60. It would, if the changes suggested at Kodaikanal be accepted, be necessary to make provision for the accommodation of the second Director and his staff. The small office room in the observatory buildings as at present designed would be too small to accommodate the double staff and it would be necessary to build a separate and double office room. The following is a rough estimate of the initial expenditure :—

	Rs.
House for Director of Magnetic Survey	20,000
Joint office	8,000
Houses for 3 Assistants and 2 peons	8,500
TOTAL ...	36,500

61. The following is a brief comparative statement of the present and proposed cost of the various changes suggested :—

Present sanctioned Expenditure—	Monthly. Rs. A. P.
Establishment, Madras Observatory and Kadaikanal Solar Physics Observatory ...	1,831 4 0
Establishment, Madras Meteorological Office ...	1,043 12 0
Establishment, Colaba ...	1,187 0 0
Contingencies—	
Madras Observatory ...	168 12 0
Colaba	150 0 0
Madras Meteorological Office	100 0 0
TOTAL ...	4,480 12 0

Recorded.

Proposed Expenditure—

Kodaikanal Observatory—			
Establishment, Solar Physics Department	1,499	4	0
Establishment, Magnetic Department	1,030	0	0
Madras Observatory—			
Establishment, Astronomical Branch	332	0	0
Establishment, Meteorological Branch	524	12	0
Colaba Observatory Establishment	465	0	0
Contingencies—			
Madras Observatory ...	168	12	0
Colaba	150	0	0
Madras Meteorological Office	150	0	0
	4,269	12	0
Miss Pogson's pension ...	250	0	0
TOTAL ...	4,519	12	0

In addition a contribution of Rs. 295 per mensem would continue to be made by the Bombay Port Trust towards the pay of the Superintendent and Time Ball Establishment of the Colaba Observatory and hence increasing it from a total of Rs. 465 to Rs. 760 per mensem.

As already pointed out the contingent expenditure would be met from the annual sum of Rs. 2,024 sanctioned by the Secretary of State for the Madras Astronomical and Kodaikanal Solar Physics Observatories, the annual grant of Rs. 1,800 for the Colaba Observatory and of Rs. 1,200 from the budget grant of the India Meteorological Department for the Madras Meteorological Office.

A small addition would probably be necessary to cover the travelling expenses of the Second Director and small establishment when engaged in the field work of magnetic survey. This would vary considerably from year to year and might be a matter for special application and sanction.

62. Amongst the advantages to be derived from the proposed changes will be—

(1) The transfer of the Imperial observatories to the immediate control of the Government of India.

(2) The extension of the field of magnetic work to include a survey of India, the necessity of which has been to some extent hitherto recognized, but which has been neglected.

(3) The abolition of the anomalous arrangements at Madras by which an officer, virtually a whole-time officer, is accorded the rank and status of a half-time officer only.

(4) The introduction of arrangements at Colaba by which it will be easy to arrange for the continuance of the publication of the Daily Weather Report under similar conditions to those at Madras and Calcutta if hereafter the Telegraph Department should wish to terminate the present arrangement as detrimental to the work of the Department at Bombay.

(5) The changes can be effected with practically no increase of cost to the state.

I have the honour to be,

SIR,

Your most obedient Servant,

JOHN ELIOT,

Meteorological Reporter to the Government of India.

G. C. Press, Simla.—No. 139 M. R. G. I.—30 6-96.—200.

Pension (1898) Department

Government {1898} of Madras.

PUBLIC.

Current No. 133

GOVERNMENT OF MADRAS
22
PENSION DEPARTMENT.

Read. 22nd Febry } 1898. Enclosures —
Regd. — do — } Spare copies 1

G.O., No. 207, 4th February 1898.

FEBRUARY.

Petitions to the Government of India.

Communicating to the departments of the Secretariat and to all heads of departments under the Chief Secretary notification of the Government of India, Home Department, making certain amendments in the rules regarding the submission of —; and ordering republication of the notification in the *Fort St. George Gazette*.

List

Order 25th Feby 1898 No 46
Recorded.

GOVERNMENT OF MADRAS.

PUBLIC DEPARTMENT.

Read—again the following papers:—

G.O., No. 931, Public, dated 18th November 1889.
" " 977 " " 19th " 1891.
" " 587 " " 28th July 1893.
" " 548 " " 19th May 1896.

Read—also the following paper:—

Notification of the Government of India, Home Department (Public), dated Calcutta, 21st January 1898, No. 65.

The following amendments in the rules regarding the submission of petitions to the Government of India, promulgated with Home Department Notification No. 1812, dated the 11th October 1889, as amended by the notifications marginally noted are published for general information:—

No. 1790, dated the 30th October 1891.
" 964 " 13th July 1893.
" 802 " 1st May 1896.

(1) For Note 1 of the preamble substitute the following:—

Note 1.—In these rules, the words Local Government include a Local Administration, the Commander-in-Chief in India, and a Lieutenant-General Commanding the Forces; and also, except as regards rule 3 (7), section III, the head of a department directly under the Government of India.

(2) In section II, add the following rule as rule 4:—

No notice will be taken of a petition relating to any matter connected with the official prospects or position of an officer still in the public service, unless it is submitted by the officer himself.

No. 66.

Copy forwarded to all Local Governments and Administrations, all heads of departments under the Home Department, and all departments of the Government of India, for information, in continuation of the endorsement from this department No. 803—818, dated the 1st May 1896.

(By Order.)

(Signed) H. LUSON,
Dy. Secy. to the Govt. of India.

To the Government of Madras.

Order—No. 207, Public, dated 4th February 1898.

Communicated to the departments of the Secretariat and to all heads of departments under the Chief Secretary.

2. The notification will be republished in English and in the several vernaculars in three successive issues of the *Fort St. George Gazette* in continuation of the previous notification.

(True Extract.)

for Chief Secretary.

To all Departments of the Secretariat. (Pension)
" all Heads of Departments under the Chief Secretary.
" all Collectors.
" all District and Sessions Judges.
" the Translators to Government.
" the Superintendent, Government Press.

Exd. Shaik Karim.

[R. E. / 43.]
1,000 -10-8-96.

Pension (1898) Department.

CURRENT No. 134

List

From

The Controller of Civil Accounts.

Order, 25th Feb 1898 No 147

Recorded.

dcl
22.2.98

No. 1469.

Dated 21st February/98.

Received 22/2/98

Registered 22/2/98.

Enclosures —

Spare copies. —

SUBJECT.

Reporting the decease of pensioner Mrs B. C. Francis—

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

No. G. 146

Lapse of Pensions by death.

Names of Pensioners.	Govt. authority sanctioning the Pensions.		Date of Demise.	Remarks.
	No.	Date.		
Mr Benjamin Christian Francis	528	18 June 1884	4th December 1897	

GOVERNMENT OF MADRAS
PENSION DEPARTMENT

Fort Saint George,
Office of the Contr. of Mily. Accts.,
21st February 1898.

~~Lt~~ Colonel,
Controller of Military Accounts.

To

The Under Secretary to Government,
Pension Department

Pension 1898 Department

Government {1898} of Madras.

REVENUE.

Current No. 136

GOVERNMENT OF MADRAS. 22 FEB 1898 PENSION DEPARTMENT.

Recd. 22nd Feby. } 1898.
Regd. 22nd Feby }

Enclosures —

Spare copies —

G.O., No. 83, 11th February 1898.

FEBRUARY.

Markapur Division.

Ordering the publication of a notification directing that the designation of the Cumbum Division in the Kurnool district be altered to —.

Read

Order 25th Feby 1898 No. 148.

Recorded.

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

Read—the following Reference from the Board of Revenue (Land Revenue), Ref. on Gl. No. 7 of 1898, dated 11th January 1898 :—

Read—the following letter from MAHOMED RAZA KHAN, Esq., Acting Collector of Kurnool, to the Secretary to the Commissioners of Land Revenue, dated 29th December 1897, R. C. No. 1567-Genl. :—

In submitting herewith a copy of letter from the Deputy Collector of Cumbum Division, dated 14th December 1897, C. No. 778-Collr., regarding the change of the name "Cumbum Division" into "Markapur Division", I have the honour to state that the proposed change is, in my opinion, very desirable and to request that the sanction of Government may be obtained for the same.

Enclosure.

From M.R.Ry. C. SESHADRI RAO, Pantulu Garu, Deputy Collector of Cumbum Division, to the Collector of Kurnool, dated 14th December 1897, C. No. 778-Collr.

I have the honour to submit that the head-quarters of this division was transferred from Cumbum to Markapur on account of the unhealthiness of the former station and a new building for the Divisional office has been built in Markapur and the office has been located in it since a year, but the division is still called "Cumbum Division."

2. The continuance of the appellation of "Cumbum Division" causes delay in the receipt of covers despatched from other offices and addressed to the Deputy Collector, "Cumbum Division", because they are first received in the Cumbum Post office and then re-directed to Markapur. Further, Cumbum being notorious for its fever, the name "Cumbum Division" puts persons seeking employment in fear, and prevents them from applying for any post in the taluk division or other offices in this division. I invited, by issuing notice in the *Fort St. George Gazette* in the beginning of this year, applications from passed candidates for clerks' places in the Taluk and Division offices and for Hospital Assistant's place at Giddalur, but I received only one application for clerk's place and the Dispensary at Giddalur has been closed for the past six months, as the services of a passed Hospital Assistant cannot be procured.

3. I therefore request that you will be good enough to have the name of this division altered into "Markapur Division."

Reference on the above, dated 11th January 1898.

Submitted for the sanction of Government.

(Signed) R. C. C. CARR,
Secretary.

To the Secretary to Government, Revenue Department,
with letter and enclosure, in original, to be returned.

Order—No. 83, Revenue, dated 11th February 1898.

Miscellaneous.

Sanctioned.

2. The following notification will be published in the *Fort St. George Gazette* :—

NOTIFICATION.

His Excellency the Governor in Council is pleased to direct that the designation of the *Cumbum Division* in the Kurnool district be altered to *Markapur Division*.

(True Extract.)

Ag. Secretary to Government.

To the Board of Revenue (Land Revenue), with enclosures.
„ other Heads of Departments under the Revenue Secretariat.
„ other departments of the Secretariat.
„ the Superintendent, Government Press, for publication of the notification.

Exd. Md. Pahilvan.

250 Copies.