

1. Number of pages. 1-8
2. Date of repair. 2-2-37
3. Initials of Reference

M.R.O. 1-22 400-22-11-80

MADRAS RECORD OFFICE.

Government of Madras.

Public DEPARTMENT.

G.O. No.	1547-A	Press ~~Mis.~~
Dated	12 - 11 -	1869.

Not to be folded or roughly handled

Ph
2-2-37

Proceedings of the Madras Government, Public Department,
12th November 1869.

No. 76. Read the following letter from the Government Astronomer, to the Acting Secretary to Government, Fort Saint George, dated Madras Observatory, 26th October 1869.

With reference to the Proceedings of the Madras Government, Public Department, 6th October 1869, I have the honour, herewith, to enclose six copies of a printed Table, showing the mean Barometric pressure, Temperature, Direction of Wind and Rainfall at Madras, prepared in compliance with the first paragraph of the Order thereon, No. 1387, appended to the Proceedings.

2. The first three columns of the averages are based upon the twenty-year series of hourly meteorological observations, made at the Observatory between 1841 and 1861. The rainfall rests upon very trustworthy records kept during sixty of the years between 1803 and 1866. Four doubtful years, viz., 1808 to 1811, had to be rejected. Mr. Goldingham, the Government Astronomer, was at that time absent in Europe, and the proceedings of the Observatory suffered the inevitable interruption sure to arise in any scientific institution left without a competent and responsible European substitute to maintain order.

3. For all places situated on the Eastern Coast of the Presidency the Madras averages will doubtless be generally applicable. In land the barometric averages and wind direction will still apply fairly, due allowance being made for the height above sea level, as explained in the foot-note to the Table. The averages of temperature will differ considerably with the locality, and the hourly variations of temperature will be greater than on the sea coast. The rainfall will be found to diminish in annual amount as the distance from the sea increases, and at the central parts of the Presidency will not exceed a third or fourth part of that due at Madras. The Madras averages will not, however, apply so well to the Western Coast, and it is almost superfluous to add that the rainfall will be totally different; much larger in amount, and the bulk of it falling during the months of June, July, and August. A similar Table drawn up from the results of the Bombay or Trevandrum Observatories would be a fair guide for places situated on the Western Coast of India. The new Meteorological Stations will hereafter furnish valuable information in regard to the temperature and rainfall, but several years must elapse before anything like average values can be obtained. It is much to be regretted that the scheme of meteorological observations was commenced so late in this Presidency. The Madras Report for the year 1868, now in hand, will be the first of its kind for Southern India, while similar operations have been carried on in Bengal since 1867, and in the North West Provinces and the Punjab since 1866.

4. Guided by the Madras Table any intelligent person near the Eastern Coast may easily foresee the nature of the weather to be expected on the morrow, and frequently for some days in advance. A good aneroid barometer, an ordinary thermometer, better still if supplemented with a cleanly-kept wet bulb by its side, and a wind vane, will prove infallible guides if properly interpreted; but unlike a clock or watch, these instruments do not afford their information upon simple inspection. A higher reading of the barometer than is due to the season by no means precludes rain, neither does a low reading indicate its certain approach. A rapid descent of the barometer, say of a tenth of an inch per day, due allowance being made for the known hourly variations, indicates approaching bad weather; but

Proceedings of the Madras Government, Public Department,
12th November 1869.

a fall of two-tenths in a day in tropical latitudes is sure warning, not to be neglected. If the temperature has been colder than average more wind than rain may be expected, but if warmer both are certain and may be safely foretold. The occurrence of a storm at or near the new or full moon or any other phase or position of our satellite is a mere coincidence, and there is no real connexion whatever between atmospherical and lunar influence, though the ignorant and superstitious still fondly cling to the belief that such is the case.

5. I most respectfully suggest the distribution of two copies of the Table to each Collector and Master Attendant throughout the Presidency. I shall supply all the Meteorological Stations with it, and shall instruct the Officers in charge at Masulipatam and Negapatam in case of any remarkable depression of the barometer, amounting to two-tenths of an inch or over in twenty-four hours, to telegraph its readings, together with the temperature, wind and rainfall, to the Observatory, without a moment's delay. By these simple precautions the approach of any serious storm cannot fail to be foreseen at least several hours before its arrival at Madras, and further than this no storm predictions can be relied upon in the present state of meteorological science.

No. 77. ORDER THEREON, 12th November 1869, No. 1547-A.

His Excellency the Governor in Council approves the suggestion of the Government Astronomer to distribute two copies of the Table of the mean Barometric pressure, Temperature, Direction of Wind and Rainfall at Madras, to each Collector and Master Attendant, and directs that a certain number of copies be also furnished to the Superintendent of Telegraphs, Madras Division, for distribution to the Officers of his Department.

2. Three copies of the Table will be forwarded to the Resident in Travancore and Cochin, and his attention requested to the remarks contained in paragraph 3 of the foregoing letter, viz., that "a similar Table drawn up from the results at the Trevandrum Observatory, would be a fair guide for places situated on the Western Coast."

(True Extract.)

Chief Secretary.

To the Government Astronomer.

- „ Resident in Travancore and Cochin, with three copies of the Table.
- „ Master Attendant, Madras, with one copy of do.
- „ Collector of

Cont. of 1869 Almanac.

PUBLIC.

To

THE GOVERNMENT ASTRONOMER.

&c.,

&c.,

&c.

Dated November, 12th.

Recd.

Encl.

G. O., 12th November 1869, No. 1547-A.

NOVEMBER.
Nos. 76-77.

Authorizing the distribution to the several
Collectors and Masters Attendant of certain Tables
designed to give warning of approaching storms.

MEAN BAROMETRIC PRESSURE, TEMPERATURE, DIRECTION OF WIND AND RAINFALL
AT MADRAS.

Date.	Barometer Reduced to 32° Inches.	Dry Bulb Thermometer in Shade. Degrees.	Prevailing Wind. Points.	Rainfall from January Ist. Inches.	Date.	Barometer Reduced to 32° Inches.	Dry Bulb Thermometer in Shade. Degrees.	Prevailing Wind. Points.	Rainfall from January Ist. Inches.	Date.	Barometer Reduced to 32° Inches.	Dry Bulb Thermometer in Shade. Degrees.	Prevailing Wind. Points.	Rainfall from January Ist. Inches.
January..... 1	30.03	75	N. E. by N.	0.0	May..... 1	29.81	85	South.	2.4	September... 3	29.78	83	S. W. by S.	14.5
6	30.03	75	N. E.	0.2	6	29.79	86	South.	2.8	8	29.79	83	S. W. by S.	15.3
11	30.03	75	N. E.	0.4	11	29.77	86	S. by W.	3.3	13	29.80	83	S. W. by S.	16.1
16	30.03	75	N. E. by E.	0.6	16	29.76	86	S. by W.	3.7	18	29.81	83	S. S. W.	16.9
21	30.02	74	N. E. by E.	0.7	21	29.74	86	S. S. W.	4.0	23	29.82	82	S. S. W.	17.6
26	30.01	75	E. N. E.	0.8	26	29.73	86	S. S. W.	4.3	28	29.83	82	S. by W.	18.3
31	30.01	75	E. by N.	0.9	31	29.72	87	S. W. by S.	4.5	October..... 3	29.84	82	South.	19.2
February... 5	30.01	75	East	1.0	June..... 5	29.72	87	S. W. by S.	4.7	8	29.85	81	S. E. by S.	20.4
10	30.00	76	East	1.0	10	29.72	87	S. W.	5.0	13	29.86	81	E. by S.	21.9
15	29.99	76	E. by S.	1.1	15	29.73	86	S. W.	5.2	18	29.88	80	E. N. E.	23.8
20	29.98	77	E. S. E.	1.1	20	29.73	86	S. W.	5.5	23	29.90	79	N. E.	26.0
25	29.97	77	E. S. E.	1.1	25	29.73	85	S. W.	5.8	28	29.91	79	N. E. by N.	28.2
March..... 2	29.96	78	S. E. by E.	1.1	30	29.73	85	S. W.	6.2	November... 2	29.92	78	N. E. by N.	30.4
7	29.95	79	S. E.	1.2	July..... 5	29.73	85	S. W.	6.7	7	29.94	78	N. N. E.	32.7
12	29.94	80	S. E.	1.2	10	29.74	85	S. W.	7.3	12	29.95	77	N. N. E.	35.0
17	29.93	80	S. E. by S.	1.3	15	29.74	84	S. W.	7.9	17	29.96	77	N. N. E.	37.2
22	29.92	81	S. E. by S.	1.4	20	29.75	84	S. W.	8.4	22	29.97	76	N. N. E.	39.2
27	29.91	81	S. S. E.	1.5	25	29.75	84	S. W.	9.0	27	29.98	76	N. N. E.	41.1
April..... 1	29.89	82	S. S. E.	1.6	30	29.76	84	S. W.	9.5	December... 2	29.98	76	N. N. E.	42.9
6	29.88	83	S. S. E.	1.7	August..... 4	29.77	84	S. W.	10.2	7	29.99	75	N. N. E.	44.3
11	29.86	83	S. by E.	1.8	9	29.78	84	S. W.	10.9	12	29.99	75	N. N. E.	45.4
21	29.84	84	S. by E.	2.0	19	29.78	83	S. W.	12.2	22	30.02	75	N. N. E.	46.9
26	29.82	85	South	2.2	24	29.78	83	S. W. by S.	12.9	27	30.03	75	N. N. E.	47.4
					29	29.78	83	S. W. by S.	13.7	January.... 1	30.03	75	N. E. by N.	47.8

HOURLY VARIATIONS OF THE BAROMETEE AND THERMOMETER FROM DAILY MEAN.
ABOVE + ; BELOW -.

MORNING HOURS.												AFTERNOON HOURS.											
1	2	3	4	5	6	7	8	9	10	11	Noon.	1	2	3	4	5	6	7	8	9	10	11	Midn.
Summer months April to September.																							
Barometer.	Inches....	0.00 - 0.01 - 0.01 - 0.01	0.00 + 0.01 - 0.01	0.00 + 0.01 + 0.03 + 0.05 + 0.06 + 0.07 - 0.06 - 0.04 - 0.03 - 0.01 - 0.01 - 0.01	0.00 + 0.01 + 0.03 + 0.05 + 0.06 + 0.07 - 0.06 - 0.04 - 0.03 - 0.01 - 0.01 - 0.01	0.00 + 0.01 + 0.03 + 0.05 + 0.06 + 0.07 - 0.06 - 0.04 - 0.03 - 0.01 - 0.01 - 0.01	0.00 + 0.01 + 0.03 + 0.05 + 0.06 + 0.07 - 0.06 - 0.04 - 0.03 - 0.01 - 0.01 - 0.01	0.00 + 0.01 + 0.03 + 0.05 + 0.06 + 0.07 - 0.06 - 0.04 - 0.03 - 0.01 - 0.01 - 0.01	0.00 + 0.01 + 0.03 + 0.05 + 0.06 + 0.07 - 0.06 - 0.04 - 0.03 - 0.01 - 0.01 - 0.01	0.00 + 0.01 + 0.03 + 0.05 + 0.06 + 0.07 - 0.06 - 0.04 - 0.03 - 0.01 - 0.01 - 0.01	0.00 + 0.01 + 0.03 + 0.05 + 0.06 + 0.07 - 0.06 - 0.04 - 0.03 - 0.01 - 0.01 - 0.01	0.00 + 0.01 + 0.03 + 0.05 + 0.06 + 0.07 - 0.06 - 0.04 - 0.03 - 0.01 - 0.01 - 0.01	0.00 + 0.01 + 0.03 + 0.05 + 0.06 + 0.07 - 0.06 - 0.04 - 0.03 - 0.01 - 0.01 - 0.01	0.00 + 0.01 + 0.03 + 0.05 + 0.06 + 0.07 - 0.06 - 0.04 - 0.03 - 0.01 - 0.01 - 0.01	0.00 + 0.01 + 0.03 + 0.05 + 0.06 + 0.07 - 0.06 - 0.04 - 0.03 - 0.01 - 0.01 - 0.01	0.00 + 0.01 + 0.03 + 0.05 + 0.06 + 0.07 - 0.06 - 0.04 - 0.03 - 0.01 - 0.01 - 0.01	0.00 + 0.01 + 0.03 + 0.05 + 0.06 + 0.07 - 0.06 - 0.04 - 0.03 - 0.01 - 0.01 - 0.01	0.00 + 0.01 + 0.03 + 0.05 + 0.06 + 0.07 - 0.06 - 0.04 - 0.03 - 0.01 - 0.01 - 0.01	0.00 + 0.01 + 0.03 + 0.05 + 0.06 + 0.07 - 0.06 - 0.04 - 0.03 - 0.01 - 0.01 - 0.01	0.00 + 0.01 + 0.03 + 0.05 + 0.06 + 0.07 - 0.06 - 0.04 - 0.03 - 0.01 - 0.01 - 0.01	0.00 + 0.01 + 0.03 + 0.05 + 0.06 + 0.07 - 0.06 - 0.04 - 0.03 - 0.01 - 0.01 - 0.01	0.00 + 0.01 + 0.03 + 0.05 + 0.06 + 0.07 - 0.06 - 0.04 - 0.03 - 0.01 - 0.01 - 0.01	0.00 + 0.01 + 0.03 + 0.05 + 0.06 + 0.07 - 0.06 - 0.04 - 0.03 - 0.01 - 0.01 - 0.01
Thermometer.	Degrees ...	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6
Winter months October to March.																							
Barometer.	Inches....	0.00 - 0.02 - 0.03 - 0.03 - 0.02	0.00 + 0.02 - 0.04 + 0.06 + 0.06 - 0.04 + 0.02 - 0.01 - 0.04 - 0.05 - 0.05 - 0.03 - 0.01 + 0.03 + 0.02 + 0.01	0.00 + 0.02 - 0.04 + 0.06 + 0.06 - 0.04 + 0.02 - 0.01 - 0.04 - 0.05 - 0.05 - 0.03 - 0.01 + 0.03 + 0.02 + 0.01	0.00 + 0.02 - 0.04 + 0.06 + 0.06 - 0.04 + 0.02 - 0.01 - 0.04 - 0.05 - 0.05 - 0.03 - 0.01 + 0.03 + 0.02 + 0.01	0.00 + 0.02 - 0.04 + 0.06 + 0.06 - 0.04 + 0.02 - 0.01 - 0.04 - 0.05 - 0.05 - 0.03 - 0.01 + 0.03 + 0.02 + 0.01	0.00 + 0.02 - 0.04 + 0.06 + 0.06 - 0.04 + 0.02 - 0.01 - 0.04 - 0.05 - 0.05 - 0.03 - 0.01 + 0.03 + 0.02 + 0.01	0.00 + 0.02 - 0.04 + 0.06 + 0.06 - 0.04 + 0.02 - 0.01 - 0.04 - 0.05 - 0.05 - 0.03 - 0.01 + 0.03 + 0.02 + 0.01	0.00 + 0.02 - 0.04 + 0.06 + 0.06 - 0.04 + 0.02 - 0.01 - 0.04 - 0.05 - 0.05 - 0.03 - 0.01 + 0.03 + 0.02 + 0.01	0.00 + 0.02 - 0.04 + 0.06 + 0.06 - 0.04 + 0.02 - 0.01 - 0.04 - 0.05 - 0.05 - 0.03 - 0.01 + 0.03 + 0.02 + 0.01	0.00 + 0.02 - 0.04 + 0.06 + 0.06 - 0.04 + 0.02 - 0.01 - 0.04 - 0.05 - 0.05 - 0.03 - 0.01 + 0.03 + 0.02 + 0.01	0.00 + 0.02 - 0.04 + 0.06 + 0.06 - 0.04 + 0.02 - 0.01 - 0.04 - 0.05 - 0.05 - 0.03 - 0.01 + 0.03 + 0.02 + 0.01	0.00 + 0.02 - 0.04 + 0.06 + 0.06 - 0.04 + 0.02 - 0.01 - 0.04 - 0.05 - 0.05 - 0.03 - 0.01 + 0.03 + 0.02 + 0.01	0.00 + 0.02 - 0.04 + 0.06 + 0.06 - 0.04 + 0.02 - 0.01 - 0.04 - 0.05 - 0.05 - 0.03 - 0.01 + 0.03 + 0.02 + 0.01	0.00 + 0.02 - 0.04 + 0.06 + 0.06 - 0.04 + 0.02 - 0.01 - 0.04 - 0.05 - 0.05 - 0.03 - 0.01 + 0.03 + 0.02 + 0.01	0.00 + 0.02 - 0.04 + 0.06 + 0.06 - 0.04 + 0.02 - 0.01 - 0.04 - 0.05 - 0.05 - 0.03 - 0.01 + 0.03 + 0.02 + 0.01	0.00 + 0.02 - 0.04 + 0.06 + 0.06 - 0.04 + 0.02 - 0.01 - 0.04 - 0.05 - 0.05 - 0.03 - 0.01 + 0.03 + 0.02 + 0.01	0.00 + 0.02 - 0.04 + 0.06 + 0.06 - 0.04 + 0.02 - 0.01 - 0.04 - 0.05 - 0.05 - 0.03 - 0.01 + 0.03 + 0.02 + 0.01	0.00 + 0.02 - 0.04 + 0.06 + 0.06 - 0.04 + 0.02 - 0.01 - 0.04 - 0.05 - 0.05 - 0.03 - 0.01 + 0.03 + 0.02 + 0.01	0.00 + 0.02 - 0.04 + 0.06 + 0.06 - 0.04 + 0.02 - 0.01 - 0.04 - 0.05 - 0.05 - 0.03 - 0.01 + 0.03 + 0.02 + 0.01	0.00 + 0.02 - 0.04 + 0.06 + 0.06 - 0.04 + 0.02 - 0.01 - 0.04 - 0.05 - 0.05 - 0.03 - 0.01 + 0.03 + 0.02 + 0.01	0.00 + 0.02 - 0.04 + 0.06 + 0.06 - 0.04 + 0.02 - 0.01 - 0.04 - 0.05 - 0.05 - 0.03 - 0.01 + 0.03 + 0.02 + 0.01	0.00 + 0.02 - 0.04 + 0.06 + 0.06 - 0.04 + 0.02 - 0.01 - 0.04 - 0.05 - 0.05 - 0.03 - 0.01 + 0.03 + 0.02 + 0.01
Thermometer.	Degrees ...	- 3 - 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 3 - 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 3 - 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 3 - 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 3 - 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 3 - 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 3 - 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 3 - 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 3 - 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 3 - 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 3 - 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 3 - 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 3 - 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 3 - 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 3 - 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 3 - 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 3 - 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 3 - 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 3 - 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 3 - 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	- 3 - 4 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6	

EXAMPLES.

1.—Required the Mean Barometric Pressure and Temperature at 7 o'clock in the morning on January 6th? The mean daily values from the upper table are 30.03 inches and 75 degrees. The winter Hourly Variations for 7 morning are + 0.02 inch and - 5 degrees. Hence the required values are, Pressure 30.05 inches and Temperature 70 degrees.

2.—Required the Mean Barometric Pressure and Temperature at 3 o'clock in the Afternoon on June 5th? The mean daily values from the upper table are 29.72 inches and 87 degrees. The Summer Hourly Variations for 3 Afternoon are, - 0.06 inch and + 7 degrees. The required values are therefore 29.66 inches and 94 degrees. Those of an Aneroid, properly adjusted, show reduced Mean Pressure at once without reduction. The Mean Pressure is about 0.01 inch less than the numbers given, for every successive rise of nine feet above the mean Sea Level.

N. R. POGSON,
Government Astronomer.

MEETINGS of the MADRAS GOVERNMENT.

Read the following letter *from the*
Government Astronomer.
(there enters 26 October 1869)

Order thereon. 12 November 1869. H. 154.

His Excellency, the
Governor in Council approves
the suggestion of the Go-
vernment Astronomer to
distribute two copies of the
Table of the Mean Baromet-
ric Pressure, Temperature,
Direction of wind and Rain-
fall at Madras, to each
Collector and Master Attor-
ney, and directs that a
certain number of copies
be also furnished to the
Superintendent of Telegraphs
Madras.

A. H.
W. M.

Mad. Govt. Secy. 19/11/69

Madras Division for distribution to the Officers of his Department.

2. Three copies of the Table will be forwarded to the Resident in Travancore and Cochin, and his attention requested to the remarks contained in paragraph 3 of the foregoing letter viz: that, "a similar Table drawn up from the results of the Travandrum Observatory, would be a fair guide for places situated on the Western Coast."

To The Resident in Trav. & Cochin ^{with 3 copies of the Table} { dated 18/11
Government Astronomer
Collector of all Districts ^{in Trav. & Cochin} { dated 23/11
Commr. West & East Coast
Master Attendant Madras ^{with one copy of the Table} { dated 18/11

Port. of 186 } 2000000.

For the

To
the Genl. & Attorneys

Dated 12 Dec 2 } 1869, No 1549
Recd.

Nos. 700000

*In the year 1869 the total
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Attorney*

Madras Observatory October 25th 1869.

From

N. R. Pogson Esq^r
Government Astronomer

To

R. W. Dalgely Esq^r
Actg Chief Secretary to Government.
Port St George.

Sir

With reference to the Proceedings of the Madras Government, Public Department 5th October 1869, I have the honor herewith to enclose six copies of a printed table, showing the Mean Barometric Pressure, Temperature, Direction of Wind and Rainfall at Madras, prepared in compliance with the first paragraph of the Order thereon, No 1387, appended to the Proceedings.

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For all places situated on the Eastern coast of the Presidency the Madras Averages will doubtless be generally applicable. Inland the barometric averages and wind direction will still apply fairly, due allowance being made for the height above sea level, as explained in the foot note to the Table. The averages of temperature will differ considerably with the locality.

and the hourly variations of temperature will be greater than on the sea coast. The rainfall will be found to diminish in annual amount as the distance from the sea increases and at the central parts of the Presidency will not exceed a third or fourth part of that due at Madras. The Madras averages will not however apply so well to the Western coast and it is almost self-evident to add that the rainfall will be totally different — much larger in amount, and the bulk of it falling during the months of June, July and August. — A similar table drawn up from the results of the Bombay or Plevandrum Observatories would be a fair guide for places situated in the Western Coast of India. The new Meteorological Stations will hereafter furnish valuable information in regard to the temperature and rainfall, but several years must elapse before anything like average values can be obtained. It is much to be regretted that the scheme of meteorological observations was commenced so late in this Presidency. The Madras Report for the year 1868, now in hand, will be the first of its kind for southern India, while similar operations have been carried on in Bengal since 1867, and in the North West Provinces and the Punjab since 1866. —

Guided by the Madras Table any intelligent person near the eastern coast may easily foresee the nature of the weather to be expected on the morrow and frequently for some days in advance. A good aneroid barometer, an ordinary thermometer, better still if supplemented with a clean kept wet bulb by its side, and a wind vane, will prove infallible guides if properly interpreted, but unlike a clock or watch, these instruments do not afford their information upon simple inspection. A higher reading of the barometer than is due to the season by no means precludes rain, neither does a low reading indicate its certain approach. A rapid descent of the barometer, say of a tenth of an inch per day, due allowance being made for the known hourly variations, indicates approaching bad weather, but a fall of two

tenths in a day in tropical latitudes is sure warning, not to be neglected. If the temperature has been colder than average more wind than rain may be expected, but if warmer both are certain and may be safely foretold. The occurrence of a storm at or near the new or full moon or any other phase or position of our satellite is a mere coincidence, and there is no real connection whatever between atmospheric and lunar influence, though the ignorant and superstitious still fondly cling to the belief that such is the case.

I most respectfully suggest the distribution of two copies of the Table to each Collector and Master Attendant throughout the Presidency. I shall supply all the Meteorological Stations with and shall instruct the Officers in charge at Masulipatam and Negapatam in case of any remarkable depression of the barometer, amounting to two tenths of an inch or over in twenty-four hours, to telegraph its readings, together with the temperature wind and rainfall, to the Observatory, without a moment's delay. By these simple precautions the approach of any serious storm cannot fail to be foreseen at least several hours before its arrival at Madras, and further than this no storm predictions can be relied upon in the present state of meteorological science.

I have the honor to be
Sir
Your most obed^t Servant
M R Pogson
Government Astronomer
and Meteorological Superintendent

MEAN BAROMETRIC PRESSURE, TEMPERATURE, DIRECTION OF WIND AND RAINFALL
AT MADRAS.

Date.	Barometer Reduced to 32° and Sea Level.	Dry Bulb Thermometer in Shade.	Prevailing Direction of Wind.	Rainfall from January 1st.	Date.	Barometer Reduced to 32° and Sea Level.	Dry Bulb Thermometer in Shade.	Prevailing Direction of Wind.	Rainfall from January 1st.	Date.	Barometer Reduced to 32° and Sea Level.	Dry Bulb Thermometer in Shade.	Prevailing Direction of Wind.	Rainfall from January 1st.
January..... 1	30.03	75	N. E. by N.	0.0	May..... 1	29.81	85	South.	2.4	September... 3	29.78	83	S. W. by S.	14.5
6.	30.03	75	N. E.	0.2	6	29.79	86	South.	2.8	8	29.79	83	S. W. by S.	15.3
11	30.03	75	N. E.	0.4	11	29.77	86	S. by W.	3.3	13	29.80	83	S. W. by S.	16.1
16	30.03	75	N. E. by E.	0.6	16	29.76	86	S. by W.	3.7	18	29.81	83	S. S. W.	16.9
21	30.02	74	N. E. by E.	0.7	21	29.74	86	S. S. W.	4.0	23	29.82	82	S. S. W.	17.6
26	30.01	75	E. N. E.	0.8	26	29.73	86	S. S. W.	4.3	29	29.83	82	S. by W.	18.3
31	30.01	75	E. by N.	0.9	31	29.72	87	S. W. by S.	4.5	October..... 3	29.84	82	South.	19.2
February... 5	30.01	75	East	1.0	June..... 5	29.72	87	S. W. by S.	4.7	8	29.85	81	S. E. by S.	20.4
10	30.00	76	East	1.0	10	29.72	87	S. W.	5.0	13	29.86	81	E. by S.	21.9
15	29.99	76	E. by S.	1.1	15	29.73	86	S. W.	5.2	18	29.88	80	E. N. E.	23.8
20	29.98	77	E. S. E.	1.1	20	29.73	86	S. W.	5.5	23	29.90	79	N. E.	26.0
25	29.97	77	E. S. E.	1.1	25	29.73	85	S. W.	5.8	28	29.91	79	N. E. by N.	28.2
March..... 2	29.96	78	S. E. by E.	1.1	30	29.73	85	S. W.	6.2	November... 2	29.92	78	N. E. by N.	30.4
7	29.95	79	S. E.	1.2	July..... 5	29.73	85	S. W.	6.7	7	29.94	78	N. N. E.	32.7
12	29.94	80	S. E.	1.2	10	29.74	85	S. W.	7.3	12	29.95	77	N. N. E.	35.0
17	29.93	80	S. E. by S.	1.3	15	29.74	84	S. W.	7.9	17	29.96	77	N. N. E.	37.2
22	29.92	81	S. E. by S.	1.4	20	29.75	84	S. W.	8.4	22	29.97	76	N. N. E.	39.2
27	29.91	81	S. S. E.	1.5	25	29.75	84	S. W.	9.0	27	29.98	76	N. N. E.	41.1
April..... 1	29.89	82	S. S. E.	1.6	30	29.76	84	S. W.	9.5	December... 2	29.98	76	N. N. E.	42.9
6	29.88	83	S. S. E.	1.7	August..... 4	29.77	84	S. W.	10.2	7	29.99	75	N. N. E.	44.3
11	29.86	83	S. by E.	1.8	9	29.78	83	S. W.	10.9	12	29.99	75	N. N. E.	45.4
16	29.85	84	S. by E.	1.9	14	29.78	83	S. W.	11.6	17	30.00	75	N. N. E.	46.2
21	29.84	84	S. by E.	2.0	19	29.78	83	S. W.	12.2	22	30.02	75	N. N. E.	46.9
26	29.82	85	South	2.2	24	29.78	83	S. W. by S.	12.9	27	30.03	75	N. N. E.	47.4
					29	29.78	83	S. W. by S.	13.7	January..... 1	30.03	75	N. E. by N.	47.8

HOURLY VARIATIONS OF THE BAROMETER AND THERMOMETER FROM DAILY MEAN.
ABOVE + : BELOW -.

MORNING HOURS.												AFTERNOON HOURS.												
	1	2	3	4	5	6	7	8	9	10	11	Noon.	1	2	3	4	5	6	7	8	9	10	11	Midn.
Barometer.	0.00 - 0.01 - 0.01 - 0.01												0.00 + 0.01 + 0.03 + 0.05 + 0.06 + 0.05 + 0.04 + 0.01											
Thermometer.	- 4 - 5 - 5 - 6 - 6 - 4 - 1 + 1 + 4 + 6 + 7												- 0.01 - 0.04 - 0.06 - 0.07 - 0.06 - 0.05 - 0.03											
Summer months April to September.																								
Winter months October to March.																								
Barometer.	0.00 - 0.02 - 0.03 - 0.03 - 0.02												0.00 + 0.02 + 0.04 + 0.05 + 0.06 + 0.06 + 0.04 + 0.02											
Thermometer.	- 3 - 4 - 5 - 5 - 6 - 6 - 5 - 2 + 1 + 4 + 5 + 6												- 0.01 - 0.04 - 0.05 - 0.06 - 0.05 - 0.03 - 0.01 + 0.01 + 0.03 + 0.03 + 0.02											

EXAMPLES.

- 1.—Required the Mean Barometric Pressure and Temperature at 7 o'clock in the morning on January 6th ? The mean daily values from the upper table are 30.03 inches and 75 degrees. The winter Hourly Variations for 7 morning are + 0.02 inch and — 5 degrees. Hence the required values are, Pressure 30.05 inches and Temperature 70 degrees.
- 2.—Required the Mean Barometric Pressure and Temperature at 3 o'clock in the Afternoon on June 5th ? The mean daily values from the upper table are 29.72 inches and 87 degrees. The Summer Hourly Variations for 3 Afternoon are, — 0.06 inch and + 7 degrees. The required values are therefore 29.66 inches and 94 degrees.
- The readings of a mercurial Barometer require to be reduced to 32 degrees by the help of tables to be found in every meteorological treatise. Those of an Aneroid, properly adjusted, show reduced Mean Pressure at once without reduction. The Mean Pressure is about 0.01 inch less than the numbers given, for every successive rise of nine feet above the mean Sea Level.

MADRAS OBSERVATORY
October 1869.

N. R. POGSON.

Government Astronomer.