which would make the eclipse of Agathocles nearly central over the northern station, and excludes the possibility of his passing by the southern route.

The author then adverts to the principal remaining causes of uncertainty in these conclusions, and points out the values of progressive change in the secular mean motions as peculiarly deserving investigation.

Allusion is then made to a record in the Persian poetical history, preserved by Sir John Malcolm, which appears to point to a total eclipse as occurring under similar circumstances in the province of Mazenderan. It appears however on calculation, that no total eclipse passed over Mazenderan, at least for many years, about the time in question.

The author then calls attention to the statement of Herodotus, that something like a total solar eclipse occurred when Xerxes was setting out from Sardes for his invasion of Greece. On calculation it appears impossible to explain this by a solar eclipse, and moreover the peculiar turn of the answer of the Magi to the inquiries of Xerxes would seem to be irreconcileable with a solar eclipse. The author thinks it most likely that the phenomenon really was the total eclipse of the moon which occurred on the morning of B.C. 479, March 14. If this were adopted, the date of the invasion of Greece must be brought down one year later than that given by the received chronology.

February 10, 1853.

LORD WROTTESLEY, V.P., in the Chair.

The following papers were read:—

1. "On the determination of the Mean Temperature of every day in the year, as deduced from the Observations taken at the Royal Observatory, Greenwich, in the Years from 1814 to 1851." By James Glaisher, Esq., F.R.S. Received Dec. 30, 1852.

This paper has for its object the determination of the true distribution of heat over the year, and is based upon an extensive series of observations taken at the Royal Observatory during thirty-eight years.

In order to obtain a correct determination of the mean daily temperature of each month, necessary to the proposed object, the author at the commencement of his memoir explains how the entire series of observations has been divided into groups, according to the recorded times of observation, for the purpose of applying the necessary corrections calculated from his tables of Diurnal Range, published in the Phil. Trans. for 1848. Having carefully explained his method of arranging and testing his data, and providing for exceptional days, upon which but few observations were recorded, the author gives the results in twelve separate tables, which exhibit the mean daily temperatures of every month in each of the thirty-eight years. In a

note to the table for each month are given:—1. The mean temperature of the coldest day of that month, with the day of the month and the year, from 1814 to 1851; 2. the mean temperature of the hottest day of that month, with the day of the month and year, and the extreme difference of mean temperature of two days in that month; 3. The day of the month on which the mean temperature was subjected to the greatest change, with the minimum and maximum mean temperatures, the year of the minimum and of the maximum; 4. the day of the month on which the mean temperature was subjected to the least change, with the minimum and maximum mean temperatures, the year of the minimum and of the maximum. These results are embodied in the opposite table:—

The author then treats of the method adopted to deduce the most probable true mean temperature due to every day in the year; and concludes his paper by observing that there are periods of some duration which are very remarkable on account of the difficulty of assigning a physical cause for the anomalies apparent in the mean temperature. Starting from the lowest temperature, in January, it increases till the beginning of March, when, between the 3rd and 10th, not only is the increase checked, but there is a remarkable depression of temperature. After the 10th, the increase proceeds and is very rapid towards the end of April and the beginning of May; this rapid increase is rather suddenly checked, and followed by a period of cold towards the middle of May: this period is very marked. As remarkable a depression of temperature at this time of the year seems to have taken place in France, having been noted in Paris and at various localities, some situated near the coast; but it does not appear that the equally remarkable rise at the end of April has been noted. After the middle of May the numbers steadily increase till the 5th of July, when they attain their maximum value. The decline in the temperature towards the end of July is followed by an increase at the beginning of August, after which the decline of temperature is very regular till towards the end of November, when a sudden and considerable increase of temperature takes place; after this the curve declines to its lowest point on the 8th of January.

	Mean temperature of coldest day from 1814 to 1851.	Day of month.	Year.	Mean temperature of hottest day.	Day of month.	Year.	Extreme difference of mean temp. of two days in the month.	Day of month on which mean temp. subjected to greatest change.	Minimum mean temperature.	Year.	Maximum mean temperature.	Year.	Difference.	Day of month on which mean temp. subjected to least change.	Minimum mean temperature.	Year.	Maximum mean temperature.	Year.	Difference.
	°			°			°		°		°		°		°		°		°
January	10·7	20	1838	52·7	24	1834	42·0	20	10·7	1838	48·0	1828	37·3	6	26·1	1841	46·7	1844	20·6
February	12·6	9	1816	55·0	9	1831	42·4	9	12·6	1816	55·0	1831	42·4	20	26·2	1845	48·0	1850	21·8
March	22·1	13	1845	58·6	31	1815	36·5	16	25·2	1845	54·3	1828	29·1	29	36·9	1816	53·8	1830	16·9
April	27·8	1	1836	63·2	25 26	1821	35·4	3 4	28·9 29·5	1839	60·7 61·3	1848	31·8	22	38·0	1837	55·9	1826	17·9
May	36·2	3	1832	72·4	15	1833	36·2	15	42·2	1839	72·4	1833	30·2	2	44·4	1850	59·8	1838	15·4
June	45·0	7	1814	76·1	13	1818	31·1	25	45·1	1835	71·5	1820	26·4	16	52·6	1850	69·4	1846	16·8
July	47·7	20	1836	79·1	15	1825	31·4	18	52·3	1816	78·2	1825	25·9	10	54·4	1835	67·8	1845	13·4
August	43·2	31	1833	75·3	1	1825	32·1	20	47·0	1839	73·3	1826	26·3	9	56·4	1848	68·9	1842	12·5
September.....	40·7	28	1824	73·5	2	1824	32·8	1	44·5	1816	71·7	1824	27·2	23	47·1	1845	60·9	1846	13·8
October.....	28·4	29	1836	64·5	5	1834	36·1	29	28·4	1836	55·5	1847	27·1	4	45·0	1836	61·7	1837	16·7
November.....	23·4	24	1836	59·7	2	1834	36·3	24	23·4	1816	53·9	1846	30·5	4	35·1	1820	52·2	1834	17·1
December	18·4	24	1830	54·9	8	1848	36·5	25	18·6	1830	53·1	1824	34·5	4	31·1	1814	50·8	1836	19·7