

Murray, of Albermarle street, invited about 60 of the leading book-sellers in London to dine with him at the Albion, in Aldersgate street, when the following new works were disposed of—1,800 copies of the Late Lord Campbell's Lives of Lord Lyndhurst and Lord Brougham 500 'Bickmore: Travels in the Indian Archipelago,' 700 'Mrs. Somerville on Microscopic Science,' 1500 'Dr Childs Benedicite,' in one volume; 600 'Handbook to the Northern Cathedrals,' 400 'Rev. B. Zwickle, Last winter in America,' 1500 'Dean Milman's Annals of St Paul's Cathedral,' 400 'Sir Neil Campbell's Journal at Fontainebleau and Elba, 1814-15,' 1,900 'Principal at Stake, or Essays on the Church Questions of the day;' 500 'Reed on Iron Shipbuilding,' 450 'Smith's Attractions of the Nile,' 1200 'Student's Manual of Modern Geography,' 500 Whympers Travels in Russian America. Mr. Bassam's Narrative of the British Mission to the Emperor Theodore was not in a sufficiently advanced state to be shown. The following popular standard works were sold.—12,000 'Murray's Student's Manuals,' 900 'Lord Byron's Works,' 700 'Lord Derby's Translation of Homer's Iliad,' 2,000 'Dean Stanley's Works,' 550 'Dr Smith's Bible Dictionary' (6 vols.), 700 'Dr Smith's smaller Bible Dictionary,' 9,000 'Mrs. Markham's histories,' 200 'Grote's History of Greece,' 4,000 'Smile's Popular Biographies,' 400 'Murray's Series of Choice Travels,' 7,000 'Smith's Classical Dictionaries,' 900 'Hallam's Histories,' 8,600 'Little Arthur's History of England,' 16,000 'Dr Smith's Greek and Latin course,' 500 'James Esop's Fables,' 400 'Barbauld's Hymns,' 5,000 'Dr Smith's Smaller Histories,' 400 'Darwin's Works,' and 800 Lyell's 'Geological Works'—*Chronicle*

SCIENTIFIC INTELLIGENCE

—*Total Eclipse of the Sun, Saturday, Aug. 1869*—A total eclipse of the sun, which is caused by the dark body of the moon passing directly between the earth and the sun while at any particular place, is so unfrequent that only a small portion comparatively of the inhabitants of the earth ever has an opportunity of beholding this the most sublime of celestial phenomena. In April 1715, the sun was totally eclipsed in London (England), and in May, 1724, at Paris, but from these years to 1900, or during nearly two centuries, the shadow of the moon neither has nor will pass over either of these cities, nor have we residents on this continent been more fortunate. A total eclipse took place in Massachusetts and the central part of New-York on the 16th Jan., 1806. Another occurred in parts of South Carolina and Georgia on the 30th Nov., 1834, and the third or next during this century which will be total and visible on part of this continent on the 7th August. The next following occurring on the 27th May, 1900, which very few now living may witness.

The average width or diameter of the moon's shadow on our earth during a total eclipse, cannot exceed 175 miles. In the present instance the path will be little more than 100 miles wide, although the shadow in a partial eclipse may be upwards of 4,000 miles broad, and it is thus evident that few comparatively will be in a position to see any of these total eclipses.

The total eclipse of 18th August last (1868) was witnessed by many foreign astronomers. Scientific expeditions were fitted out by the various European governments, and although the line of totality passed through India, China, and the Islands of the Pacific, men were found ready to undergo the distant voyage in the pursuit of science.

The line of totality during the eclipse of August next will pass over the the North-western States, towards the South-east, through Iowa, Illinois, Kentucky, and North Carolina; and will traverse the Blue Mountains, the Alleghanies and the Cumberland Mountains. The totality will not in any place exceed three minutes of time. Several of the instruments now used, were to former observers almost unknown. In reference to this fact we might only mention the Spectroscope and the various appliances of the Art of Photography. These new appliances of science have already thrown an interest, hitherto unknown, round the wonderful phenomena accompanying a total eclipse, and will urge men of science to prosecute with renewed energy the curious and varied appearances which are presented.

Might not stations on the high mountain ranges of the Alleghanies furnish fresh means in the investigation of Spectrum Analysis? At all events we may suppose that the altitude of these mountain ranges would be placing the observer far removed from the presence of clouds, or mists, to interfere with distinct vision, and thus secure an amount of certainty of observation not to be found on the surface of the earth generally, besides many other suggestions of a very highly important nature will occur to men of science, and we sincerely hope that the first opportunity may not be lost, and that our Province may be able through the liberality of the local government to fit out a scientific expedition to witness and record the interesting appearances. We believe that the province possesses all the instruments necessary, and men of science able to conduct to a successful issue any expedition of the kind; all that is required is the means of transport, which, owing to the proximity of the line of totality, will amount but to a mere trifle compared with the results, which every country seems anxious to join in.

There is little doubt but that some of the European observers will be present; our cousins on the line of the eclipse will, with their usual thirst for knowledge, be fully prepared for the important work, for it may be borne in mind that they fitted out an expedition to visit the uninhabited

coast of Labrador in 1860, for a similar purpose, and our government at that time sent with them a gentleman, fully able, and we hope again willing, to undertake a like duty, assisted, by some of our own men, under the prestige of our local government. It might not be out of place that the different provinces of the Dominion should join with the projected expedition, but the length of territory almost precludes any joint action, and a much greater amount of money would necessarily be required for the outfit, and further, it might be well that each province should bear its own burdens and its own honors in such like expeditions, which occur so seldom, and the extent of which is so circumscribed.—*Montreal Gazette.*

—*The Solar Eclipse as seen by a Ship Captain*—Captain Charles G. Peirins of the Peninsular and Oriental Steamship Company's steamer Carnatic, describes his view of the solar eclipse as follows, in a letter published in the London Times:

"The position of the ship at the time of the first contact was latitude sixteen degrees North, longitude fifty-four degrees fifteen minutes East, being thus twenty miles north of the most northern limit of totality in that meridian. The eclipse was with us only partial, that portion of the sun's disc remaining unobscured being, however, only one sixteenth part of its diameter. At 7:10 A.M. the nearest point of totality had been reached, the altitude being twenty-two degrees ten minutes; it was at this time our best efforts were directed for observing the phenomena presented. That portion of the sun remaining uneclipsed consisted of a narrow streak, in shape like a crescent, of its upper left limb, in size about one sixteenth part of its diameter. The light emitted from this was of a very peculiar character, and difficult to describe, being at the same time extremely brilliant, and yet most remarkably pale. The high sea running appeared like huge waves of liquid lead and the ghastly paleness of the light thrown upon it, and all round, revealed a scene which, for its weird-like effect, it would be impossible to depict as it is to describe. The eclipse not being total (with us), the corona was not visible. The first appearance noted by the spectroscope was that of several dark lines in the spectrum of that portion of the sun visible at its greatest obscuration, which was examined through a narrow chink with the instrument as recommended by Lieutenant Herschel. The next was a roughness on the concave edge of the crescent of sunlight left visible. This was well marked, and seen very plainly with the unarm'd spectroscope; the rapidly increasing brightness of the sun prevented the prisms being of much use except during the darkest part of the eclipse. Throughout the rays between red and grey predominated over those between green and violet. A small black spot was observed on the sun's disc, situated in its upper left limb, distant about one-eighth part of its diameter from its extreme edge. Contact ceased at 15 hours, 43 minutes, 39 seconds, Greenwich meantime.

—In the year 1869 there will be two Eclipses of the Sun, and two of the Moon.

I (1) A partial eclipse of the Moon, January 27, 1869, visible in Canada. The following Table shows the local mean astronomical time at which the several phases occur:

| PHASE.                               | Halifax | Fred-ericton | Quebec  | Mon-treal | Kings-ton. | Tor-onto | London  |
|--------------------------------------|---------|--------------|---------|-----------|------------|----------|---------|
|                                      | h. m.   | h. m.        | h. m.   | h. m.     | h. m.      | h. m.    | h. m.   |
| First contact with the Penumbra..... | 7 38    | 6 53.7       | 6 34.4  | 6 23.8    | 6 12.1     | 6 0.7    | 5 53.0  |
| First contact with the Shadow.....   | 8 14.8  | 7 4.7        | 7 44.3  | 7 34.9    | 7 23.1     | 7 11.7   | 7 4.0   |
| Middle of the Eclipse.....           | 9 23.8  | 9 13.7       | 8 53.4  | 8 43.8    | 8 32.1     | 8 20.7   | 8 13.0  |
| Last contact with the Shadow.....    | 10 32.8 | 10 22.7      | 10 2.4  | 9 52.8    | 9 41.1     | 9 29.7   | 9 22.0  |
| Last contact with the Penumbra.....  | 11 43.8 | 11 33.7      | 11 13.4 | 11 3.8    | 10 52.1    | 10 40.7  | 10 33.0 |

The first contact with the shadow occurs at 50° from the northernmost point of the Moon's limb towards the east; and the last contact at 31° towards the west; in each case for direct image. Magnitude of the Eclipse (moon diameter=1) 0.450.—*Canadian Almanac.*

—*Motions of the Stars.*—The *Scientific American* says: "A remarkable paper has lately been sent to the Royal Society of England by Mr. Higgins, one of the Fellows. It announces the application of a new and most promising method of enquiry as to the determinations of the stars' motions. Mr. Higgins tested this method by the motion of the star Sirius. The spectrum of this star is crossed by a number of dark lines and among others by one known to correspond to a bright line in the spectrum of burning hydrogen. The two spectra were brought side by side, and due care having been taken to magnify as much as possible any discrepancy which might exist, it was found that the dark line in the spectrum of Sirius was not exactly opposite the bright line in the spectrum of hydrogen, but was slightly shifted towards the red one of the spectrum. It followed from the amount of the displacement that at the observation Sirius was receding from the earth at the rate of forty miles per second. When due account is taken of the earth's orbital motion at the time of observation, it results that Sirius is receding from the sun at the rate of twenty-eight miles per second, or

(1) The other three will be given in our Jan. No.