peaks. At 80 miles from the mouth the explorers found on the plain some vestiges of mastodons, and on clearing away the snow from a spot whence emerged the tusks of one of that extinct race, they brought to light its enormous body, in a perfect state of preservation. The skin was covered with black stiff hair very long and thick upon the back. The tusks measured 11 ft. 8 in. in length, and were bent back about the level of the eyes. From its stomach were taken pieces of bark and grasses, the nature of which could not be analysed on the spot. Over an area of many miles the plain was covered with the remains of mastodons. This region abounds with polar bears, which live on the remains of the mastodons. At 120 miles from the coast and half a league from the river, rises a vast block of ice 1,000 ft. high, the base of which is surrounded by gravel and polished rounded stones deeply sunk in the soil. The Arctic animals are very numerous in this valley, and myriads of birds fly above the river and over both of its banks. At the date of his despatches M. Pavy was preparing to winter in the 75th degree of latitude in the valley of the great river of the supposed polar continent. He considered himself certain to arrive in the beginning of next season at a polar sea of moderate temperature at the northern extremity of the continent. The explorers calculate on afterwards reaching the Atlantic through Melville Strait.

THE two principal articles in the last number of the *Bulletin de la Société de Géographie* are, one by M. Jules Gerard, on the present state of knowledge of New Guinea, in which he gives a historical account of discovery in that island, and a description of its geography, ethnography, natural history, meteorology, its colonisation and commercial relations. This is accompanied by a good map. The other is an account of the river Amazon, and the region through which it flows, by the Abbé Durand, compiled from various geographical memoirs. The same number contains a letter from the Abbé Desgodins, pointing out, apparently from personal knowledge of the region concerned, a number of errors in Mr. T. T. Cooper's "Travels of a Pioneer of Commerce."

WE have received the programme of "The Leeds Naturalists' Field Club and Scientific Association," for the next three months. It meets every Tuesday evening, alternate meetings being devoted to the reading of papers and to the exhibition of specimens, with general discussion on scientific subjects. During the first three months of 1873 the following papers will be read:—Rev. John Hanson on "The Development or Transformation of Insects." Mr. James Abbott, vice-president, on "The Anatomy of the Slug." Mr. Geo. Ward, F.C.S., "Observations upon the Element Carbon." Mr. Edwin Birchall, on "The Origin and Distribution of the Insects of the British Islands." Mr. Wm. Todd, vice-president, on "The Silurian Rocks and Fossils." The annual meeting will be held on March 25.

THE last number of *Memorie della Società degli Spettroscopisti Italiani*, contains drawings of the chromosphere as observed at Rome, Naples, and Padua during January, February, and March 1872.

THE first number of *Iron*, the name of the new series of the *Mechanic's Magazine*, is printed on a very much larger size of paper than its predecessor, and contains a number of useful articles, mostly on the practical applications of scientific principles. We wish *Iron* a long and successful career.

THE principal paper in the *Revue Scientifique* for January 18, is a continuation of the article on "The Observatories of Great Britain," in which details are given concerning the Observatories at Edinburgh, Dublin, the Cape of Good Hope, Madras, Melbourne, Paramatta (New South Wales), Sydney, and Lucknow.

WE learn from the *Medical Record* that a new faculty of medicine is about to be instituted at Geneva.

THE STAR SHOWER AS SEEN AT MAURITIUS

A GREAT shower of meteors was observed in this colony on the night of November 27 last. I had not myself the good fortune to see it, but it was seen by several other persons who have obligingly communicated their observations.

At the Observatory it is customary to watch, as far as possible, for meteors during the whole of November, but, on the night in question, the sky was nearly overcast. At 9.15 P.M. we had a shower of rain, and at 9.30, when the last observation of the instruments and of the weather was taken for the night, nine-tenths of the sky were overcast, and the weather was gloomy. Looking out about midnight from a window facing the north I observed that the visible parts of the heavens were still overcast, but remarked that the clouds were unusually luminous, as if the moon in her first or last quarter were shining behind them. This struck me particularly, and I waited some minutes in expectation of seeing a break in the clouds.

On the following day, I received a telegram from the Hon. Edward Newton, Colonial Secretary, announcing that he and Mr. C. Bruce, Rector of the Royal College, had counted from their residence, twelve miles off, and nearly 900 feet above the sea-level, 2,678 meteors between 9.30 P.M. and 12.55 A.M.; and soon afterwards I ascertained that some other members of our Meteorological Society, as well as several other gentlemen, had also observed the shower, all from the same part of the Island.

In place of attempting to summarise the accounts which have reached me, I think it preferable to give them in full, in the order in which they were received.

(1.) *Observations by the Hon. Mr. Newton and Mr. Bruce.*—“About 9.30 on the evening of November 27 we observed an unusual frequency of shooting stars. At 9.35 we began to keep regular count. We continued our observations till 12.55, at which time the frequency had greatly diminished, as will be seen from the following statement of the numbers seen in the intervals of time noted—

From 9.35 to 10.35	786
„ 10.35 „ 11.35 . . .	1,160
„ 11.35 „ 12.10 . . .	454
„ 12.10 „ 12.35 . . .	193
„ 12.35 „ 12.55 . . .	85
Total . . .	2,678

“The approximate time of greatest intensity of the shower was from 11 to 11.30. About this time two meteors of extraordinary brilliancy were particularly noted: the first at 11.22, and the second at 11.44.

“The former of these started from the three stars in the tail of Aries, and the luminous orb vanished somewhat south of the Ecliptic. The train of this meteor was distinctly visible for 4 minutes. At the vanishing moment of the luminous point, it slowly wheeled from horizontal to vertical, and was seen for nearly two minutes vertical to the horizon.

“The latter, starting from a point at right angles to the three stars in the tail of Aries and the Pleiades, passed through the Pleiades, Taurus, and Orion, and vanished near Sirius. Its train was visible for more than a minute.

“Nearly all the meteors observed radiated from a point near Aries, nearly at right angles with the Pleiades, and shot either in the direction of the bright meteor of 11.44, or in a line through Aries, cutting the ecliptic and vanishing to the S.

“From eighty to ninety per cent. of the meteors were followed by a soft, broad train of light, visible for a few seconds after the vanishing of the luminous point, of diameter at least equal to the luminous orb, and extending from 10° to 20°. In the case of the two bright meteors above mentioned, the train of light extended over at least 40°.

“During our observations, portions of the heavens were from time to time obscured by dark fleeting clouds, which at times obscured the starting and vanishing points.

“Between 10 and 11 we observed occasionally a pulsating coruscation, similar to the appearance of the Aurora Australis. Mr. Meldrum, however, informs us that the instruments at the observatory gave no indication of a magnetic disturbance.

“In colour the majority of the meteors seemed to be equal in purity to that of the most colourless stars.

"Taking a point as above described as visible radiating point, the angle of the majority of the meteors was about equal to that of the meteors figured in 'Johnston's Astronomical Atlas,' seen in November 1866.

"A few however, shot with extreme velocity towards the north; these had no trains of light; other meteors shot parallel to the general direction close to the horizon. Although we discontinued our observations at 12.55, the shower was not over, and a few meteors were seen near the western horizon after this time.

"It must be observed that the point from which our observations were taken was obscured by trees in the directions of the western horizon. About the time of greatest intensity, nine meteors were visible at the same moment.

"During the greater part of our observations, up to midnight, the radiation of these four or five meteors was nearly synchronous.

"Towards the time of the greatest intensity, one of the observers was absent for about fifteen minutes, and it is probable that many meteors during this interval escaped observation."

(2). *Observations by Lieut.-Colonel O'Brien, Inspector-General of Police, and Mr. A. Brown.*—"At about 10 o'clock last night (Nov. 27) our attention was drawn to the number of falling stars. Going outside and standing back to back, Mr. A. Brown and myself in a short time counted no less than 110. This continued till near 11 P.M., when we went out again, and in five minutes counted 118. Some of these meteors were very bright, having tails like comets. Their course was generally longer than that of the others, and they seemed nearer to the earth. The course of the shower was almost invariably from north to south, and more meteors were visible towards the southern hemisphere than in other quarters."

(3). *Observations by the Hon. Robert Stein and Mr. A. C. Macpherson.*—"On November 27, about 10.15 P.M., on looking towards the N.E. we noticed several meteors falling; the Pleiades, Hyades, and Orion being at that time about 45° to 50° above the horizon.

"On observing carefully, we found the meteors in great numbers coming from due north very much on a level with the stars above mentioned, and rather farther to the north of the Pleiades than the distance between the Pleiades and Hyades.

"They came not from a point, but as it were along a broad belt crossing the sun's path nearly at right angles, appearing at times in the north, but often also at the zenith and towards the southern horizon, passing as it were parallel, some from N.E. to S.E., some from north to south, and some from N.W. to S.W.

"The number of meteors was so great, and they appeared so irregularly, sometimes towards the north, sometimes overhead, sometimes to right or left of the zenith, and sometimes towards the southern horizon, that we could not keep count of them; but from 10.15 to 10.30 they appeared to be falling at about the rate of one in every second, sometimes singly, and sometimes in twos or threes at a time. The more distant ones showed only bright luminous points, but the nearer ones every few minutes showed trains and sparks like a rocket, varying from 2° or 3° to 5° or 6° in length, and seldom reaching a length of 10°.

"Our view to the S.W. was partly closed, but on changing position, so as to get a view of that quarter, I found the meteors falling there too; but it appears to me during the short time I looked in that direction, towards eleven o'clock, as if fewer were falling there than I had observed to the eastward of south."

(4). *Observations by Mr. W. H. Marsh, Assistant Colonial Secretary.*—"I observed the shooting stars at first at 9 o'clock. The sky was cloudy, but in spaces that were occasionally left clear, the meteors could be seen going from north to south. About half an hour later the sky was quite clear. I counted 100 shooting stars in less than five minutes. With the exception of one in Andromeda, which went in an easterly direction, they all went to the south. I continued observing till 10.30. The meteors were almost entirely confined to the western half of the heavens, and by far the greater number was observed in Aquarius and in the neighbourhood of Fomalhaut. Most of them were very dim and small, but occasionally a bright one made its appearance. I observed a very bright one at about 10.15, which came from the direction of the zenith, and appeared to pass right through the Star Achernar."

Observations by Capt. Fry.—"On the evening of November 27 my attention was drawn towards the heavens by seeing an immense number of stars of all magnitudes shooting

towards the south from Orion, which was at the time about 30° above the eastern horizon, in a straight line through the zenith to about 40° above the western horizon, below which altitude clouds obscured the sky. The greater number seemed to move from the southern side of the above described line. They were all exceedingly bright, and varied in size from an ordinary meteor to *infinitely* small. The time was from 9 to 10.15 P.M., when clouds screened the view. I endeavoured to keep count, but could not, owing to the immense number and the quickness of their movements. I am an old mariner, and have often had opportunities of watching the heavens at night, but I never witnessed anything to compare to the sight on the night of the above date. On the 28th I made preparations to watch for a repetition of the spectacle; but not having seen more than is observed on an ordinary night, say four or five, I gave it up, and retired at 11 P.M."

Observations by Capt. Gaston, of the Ship "Pénélope," from Vohemar to Mauritius.—"Le Mercredi, 27 Novembre, étant par une latitude de 19° 52' Sud et 50° 25' longitude Est, le temps était magnifique, mais calme. Vers 7h. $\frac{1}{2}$ du soir une chose rare se montra au firmament; une quantité extraordinaire de météores parurent successivement, se formant dans le Nord, allant dans leur course vers le Sud-Est. Les uns donnaient une clarté très vive et d'autres ne laissaient qu'une légère traînée de feu ressemblant à des fusées; mais tous allaient avec une grande rapidité. Ce manège de petits météores dura jusque vers 2 heures du matin.

"Un autre fait non moins curieux s'était présenté dans la journée. Tous les marins connaissent l'Alcyon (ou hirondelle de mer) et tous savent que ces petits oiseaux se tiennent dans les eaux du Navire, mais en petite quantité. Nous avons, pour ainsi dire, été assaillis par ces oiseaux, les uns voltigeant autour du navire et les autres posés sur l'eau assez près les uns des autres, ce qui ressemblait à une masse noire."

The above observations, with the exception of Capt. Gaston's, were all taken within a circle of three miles in diameter, and at altitudes of 700 to 1000 feet.

There are, as might be expected, some discrepancies in the accounts given, but it appears to me that the meteors were seen in two streams, the one passing through Aries, Pisces, and Aquarius, nearly along the Ecliptic, and the other through Orion towards Sirius, while others passed through the zenith from north to south.

The radiant point would appear to have been close to the stars α and ζ in the foot of Perseus, near the spot indicated by Mr. Newton and Mr. Bruce. Mr. Stein, however, probably from his seeing only a part of the sky, thinks there was no radiant point. I have not seen him since I received his description; but from verbal explanation given by Mr. Bruce and Mr. Marsh, and from Capt. Gaston's account I think the meteors shot from the above-mentioned point. Mr. Bruce informs me that he observed a meteor pass from Northward close to and parallel with ϵ and α Tauri; and Mr. Marsh mentions that he saw one pass from near the zenith right over Fomalhaut.

I think there must be some mistake in the statement that many meteors shot from Orion through the zenith to the meteor horizon.

With regard to the time of maximum intensity it must have been at 11, or soon after.

The shower was evidently not equal in splendour to that of November 14, 1866.

Watch was kept up during the night of the 28th to 29th, but the few meteors seen did not radiate from any point.

The number of the meteors seen from the 12th to the 15th was not greater than on ordinary nights.

On referring to Quetelet's Catalogue, I find mention of only three showers seen about November 27, one on November 25, (16th Jul. Cal.) 1602, a second on November 25, 1822, and a third on November 29, 1850.

While on the subject of meteors, I beg to send an account of an extraordinary one seen here by the Rev. Mr. Wright on the night of November 7 last. [See this week's Correspondence.] Mr. Wright's description, in several respects, applies to the moon, which was at the end of her first quarter, and in the part of the heavens indicated. Has any similar meteor been seen in former times? It was totally different in form and appearance from the great meteor of Nov. 27, 1862.

C. MELDRUM

Mauritius, Dec. 12, 1872