

With the growth of civilized methods of living, with national and international commercial relations springing up fast amongst us, for the management of a system of railways in a country, for steamer service, and for the Telegraph Department, a uniform standard time is almost a pressing need. When the construction of a railway line between India and Burma has come within the range of practical politics, it will be necessary to have a common standard of time between the two parts of the Empire.

The nautical almanac gives us a list of countries that have adopted standard time referred to the meridian at Greenwich. France has lately added its name to this list, and it seems to me that it is an example that might well be followed by Calcutta, where the existence of two systems of time gives rise to extreme inconvenience. I cannot conceive that difficulties would arise from such standardisation, though it is with some diffidence that I make the suggestion. It is with the purpose of getting the views of the members of this Society that I have introduced the subject.

A Meteoric Phenomenon.

BY H. B. HOLMES.

It was about last Xmas I noticed in the *Times of India Illustrated Weekly*, among the Snapshot Competition photographs, one that had obtained the first prize and which struck me as very extraordinary.

The title of this picture was "A Meteorite recently seen at Mhow (24th November 1910)."

Through the courtesy of the Editor of the *Times of India Illustrated Weekly*, I am now able to reproduce this photograph for your inspection, and I have been able to communicate with Sergt. A. Hempstead, Divisional Office, Mhow, who took the photograph, for further particulars of this very unique picture and his account, which to my mind makes the subject more interesting than I had anticipated.

When I saw the reproduction the first thought that came to my mind was how was it possible for any one to have been able to snapshot a meteor in its flight. The next thing that struck me was that the meteor's path did not commence right from the top of the plate, but some little distance down, and it dissolved into nothingness before it reached the tops of the trees which showed out prominently in the foreground. Another more striking point was that it was contrary to all my ideas of what the path of a meteor would be,

even if one were lucky enough to be able to photograph it. My impression is that on a photographic plate the path of a meteor would be represented by a clean-cut line either straight or curved. The photograph represented the path zig-zag, and reminded one more of a reproduction of a flash of lightning. The sky, however, was perfectly clear, and there was no sign of any clouds. One very noticeable feature was the distinct deviation from the downward path some little distance from the starting point and the sudden termination in rather a bright spot.

I cannot do better than here reproduce Sergt. Hempstead's letter to me :—

“In reply to your letter of 13th March 1911, I take great pleasure in forwarding you the following information regarding the meteor referred to :—

“(A) About 5-50 p.m. on the evening of the 24th November 1910, there suddenly appeared in the heavens, almost immediately overhead, a very bright ball of fire (which appeared to the naked eye about the size of a cricket ball); it travelled at an enormous speed in a downward, south-westerly direction, leaving a very bright line of fire on the course travelled, and disappeared from sight; it did not appear to burst, but seemed to travel beyond the reach of the naked eye.

“(i) The time taken for its flight from when it first appeared until it disappeared from sight was about 2 seconds.

“(ii) The noise (slight) made by its flight was similar to that of a rocket or shell travelling through the air, and the smell like that of a broken flint.

“(iii) The atmosphere at the time appeared to be filled with a blue mist; there was no breeze blowing, and the sky was absolutely cloudless.

“(iv) The line of fire left by the meteor (as will be seen by the photo, which was taken 1½ minutes after its first appearance) wavered, ‘it is presumed by the different currents of the air,’ and gradually faded away until about 20 minutes after its first appearance, only a small cloud of fire was visible in the direction where the meteor disappeared.

“(B) I am enclosing two sketches, which may explain better the direction of the meteor's flight.

“(i) Sketch No. 1 is a portion of the sky, showing the direction the meteor travelled overhead.

“(ii) Sketch No. 2 is what appeared to me to be the direction it travelled across the earth ; it would appear that, if the meteor did not burst, but kept on travelling, it would pass nearest the earth's surface, somewhere in the vicinity of Cape Town. On the other hand, it may have burst somewhere in Central India.

“(iii) I noticed some time back a letter in the *Pioneer* stating that a meteor was seen from Bhopal about the same time as this one appeared at Mhow. In that case the direction pointed out by me would appear correct.

“(iv) A reference to the small sketch in corner of Sketch No. 2 shows the angle at which the meteor appeared to pass the earth to be about 45° with the earth's surface at Mhow.

“(c) As regards the photo—

“(i) The camera used was an ordinary $\frac{1}{4}$ plate folding Carbine, fitted with a Beck Rapid Rectilinear Lens, which was set at F-11, and a time exposure of 7 seconds given.

“(d) The negative, I regret to say, I prefer to keep in my own possession, as I value it very much, and it might be damaged in transit.

“I should be very glad to assist you in any way I can in giving any further information, and as I am interested in these things, would be much obliged if you could let me know the result of your meeting on the 24th instant.”

From this letter, it will be noticed that it was not the meteor itself which Sergt. Hempstead photographed: the meteor had only been visible for about a couple of seconds and had disappeared $1\frac{1}{2}$ minutes before the photo was taken. The picture is that of a trail of fire which was left behind the meteor.

I would draw special attention to the duration of this luminous aftermath.

Sergt. Hempstead has very kindly sent me two photographs. No. 1, he explains, is the actual representation of the fiery trail ; No. 2 has been somewhat faked in order to bring out the same more prominently. He has also gone to a lot of trouble in making diagrams, which are here reproduced, showing the direction of the flight of the meteor and his position.

My intention in bringing this subject forward was to raise the question as to what was the path of a meteor in its

flight ; was it, as I had always imagined, a clean-cut straight or curved line, or was it zig-zag, and if so, was there any explanation for it? Since reading Sergt. Hempstead's letter, it seems to me we have a very interesting and extraordinary phenomenon to deal with. With a meteor there is a fiery trail, but it vanishes as quickly as the meteor itself. What, then, is the explanation of this fiery trail ; its duration of luminosity ; its extraordinary zig-zag appearance, and the fact that it was not visible until the meteor had travelled some distance, and of its sudden termination ; and what was the blue mist that was noticeable ?

It would also be interesting to know whether this same phenomenon was noticed at Bhopal or elsewhere.

Meteors of April 1911.

By B. M. RAKSHIT.

In April there are six meteoric showers. The first is from 17th April to 1st May ; the second from 18th to 23rd April ; the third on 20th and 21st ; the fourth from 20th to 22nd ; the fifth from 20th to 25th ; and the sixth on the 30th April. Of these the shower from 20th to 22nd is important and the meteors of it are swift. The radiant point is near the boundary of Lyra and Hercules, but the shower is known as the Lyrid shower. A short description of Lyra would, it is considered, be useful to persons watching for the meteors. Lyra is a small constellation, but it is widely known, as it contains the very bright star, Vega or α Lyrae. Those who do not know it may easily find it by the following method. The seven stars of the Plough in the Great Bear are well known. Join ϵ Ursae Majoris the 3rd star in the handle of the Plough with the Pole star, and draw a line perpendicular to it from the latter star, and this will pass through Vega. Near this star will be found three double stars ϵ , ζ and δ Lyrae, which can be separated with very little optical aid. Below ζ and ν will be found β and α , of which the former is a short period, variable but always visible to the naked eye, as it never descends below 4.5 in magnitude. On the east of Vega will be found η and θ Lyrae, two small stars below the fourth magnitude. On the 20th April Vega will rise at 9h. 21m. p.m., and its angular distance at that time from the east point will be about 43° towards north. The R. A. and the declination of the radiant point of the shower are 18h. 4m. and 33° N. It is about 4° north of σ Hercules, a star of fourth magnitude, and 43m. ahead of β Lyrae.