

Moore, of Fort Frances, who visited some Indian patients soon after the display states that an Indian remarked; "I am sure you will hear something. It must be the end of the world!"

#### THE PATH OF THE METEORS

As the meteors were observed at places a very great distance apart the *direction* of their path can be determined with considerable accuracy, though its exact location may be slightly in doubt. The place farthest west from which a report has been received was Mortlach, which is about 65 miles west of Regina, in Saskatchewan. Here they were described as travelling from west to east. At Pense, about 48 miles to the east, they were described as moving "in the sky directly overhead, in a direction from west to east."

When seen in Ontario the meteors were described as travelling generally from north-west to south-east, and sufficient observations were reported to enable one to determine with some definiteness a point which was directly below the path in the sky. From Campbellville the report states: "They passed *directly* overhead, travelling from north-west to south-east." At Hespeler, they "seemed to go right over our heads, or a little to the north." At Elora they appeared as "rising straight overhead." At Guelph, on plotting the path on a plan of the city streets, they seemed to have passed slightly to the south-west of the zenith. At Waterloo the course of the first was described as "almost directly overhead, but a little to the east." As to the rest, the majority were "a little to the east of us, with a few directly overhead, none to the west." At Berlin the course was judged to be  $15^\circ$  to the north-east of the zenith; at Georgetown, about  $30^\circ$  from the zenith; and at Sheridan, about  $15^\circ$  to the west of the zenith. Reference to the map (Fig. 1) shows that there is considerable discrepancy between these observations. Indeed, observers at points still farther away reported the bodies as having passed overhead.

However, we should not be much surprised at this. Unless a person has some definite objects to guide him it is very

difficult to judge angular distances correctly. To view a body directly overhead is extremely uncomfortable, and by most people a body is thought to be overhead when it is at a considerable distance from the zenith. Similarly, angular elevation of a body above the horizon is almost always adjudged too great. This question will be referred to again when discussing the height of the bodies above the earth.

In view of these conflicting reports it was necessary to arrive at some compromise, and the most probable path seemed to me to be a line passing almost over the city of Guelph, but a little to the south-west. The error in the location of this line may amount to three or four miles; and indeed it is well to remember that the meteoric bodies themselves were scattered over a path of perhaps this width.

The line on the earth's surface directly beneath the path of the meteors in the air, I shall call the *trace* of the meteors. This line cuts the 80th meridian in north latitude  $43^\circ 24'$ .

Now the observations show that the meteors were travelling practically parallel to the surface of the earth. It is true that some observers thought they detected a slightly downward tendency, but when seen a thousand miles farther on they were apparently as high, if not higher, in the air. The downward tendency, if it existed, was very slight.

It would seem that the bodies had been travelling through space, probably in an orbit about the sun, and that on coming near the earth they were promptly captured by it and caused to move about it as a satellite. It seemed reasonable, then, to consider the plane of the path as passing through the centre of the earth and hence cutting its surface in a great circle.

By means of the formulas of spherical trigonometry I determined the location on the surface of the earth of a great circle passing through Pense, W. Long.  $104^\circ 59'$ , N. Lat.  $50^\circ 25'$ , and the point in Ontario, W. Long.  $80^\circ$ , N. Lat.  $43^\circ 24'$ . In the accompanying table are given points on this circle ranging over two-thirds of the circumference of the earth.