

Pseudaurora Borealis; or, What was It?

THE observations which I am about to recount may not be new to others, but, as I have failed to see or hear of any such after several years' waiting, I communicate mine, hoping that by doing so I may call them out if there are any. The business portions of Minneapolis, Minn., had for many years been lighted by the Brush system of electricity, during which time that method of street illumination had been extended considerably in all directions, leaving, however, much more that continued to be lighted by gas and oil. I had occasion to visit the suburbs of the city under circumstances which delayed my return until a very late hour, and for a considerable portion of my way the latter method of lighting prevailed. On passing into the electrically-lighted section, my attention was arrested by the appearance of the aurora borealis, or northern lights.

It being in the month of February, and their appearance at that season by no means a rare event, while the lateness of the hour, and the severity of the cold, with the air so filled with frost as to give an appearance of a light fog, I was hastening forward as rapidly as I could on foot, when I noticed that the aurora had disappeared, but after a few steps more it reappeared. Pausing a moment, I saw there was no mistaking the fact of my seeing a genuine display of northern lights, I again went forward with the same experience of interruption. This circumstance awakened a suspicion that the phenomena were in some way to be accounted for by the presence of the electric lights, and, after another brief pause to make myself assured of the certainty of my observations, I went back along the way I had come until fully out of the zone of the Brush lights, and well into that of the gas-lamps, where I found no signs of an aurora.

Returning slowly towards and into the former illumination, all of the observations were repeated precisely as at first, until having passed a given burner, when the phenomena again ceased. After repeatedly changing my position in relation to a special burner in a northern and southern direction, during which I discovered that the phenomena was most distinct when I was observing them at or about the angle of 60° to the burner, a corresponding movement east and west gave no more facts, and after once more noting the characteristic movements of the serrated columns of partially prismatic radiations of the auroral beams along the penumbrated arc, I went on my way resolved to keep a good outlook for another such observation, but it has never come after nearly five years of waiting. If others have noticed the same, or similar phenomena, it will be gratifying, and in order, for them to say so.

P. L. NATCH, M.D.

Anacortes, Washington, Nov. 3.

The Humming-Bird's Food.

FOR three years I have made a special study of the habits of the yellow-bellied, or sap-sucking woodpecker (*Sphyrapicus varius*), as found in the White Mountains of New Hampshire. The birds arrive in that region near the middle or 20th of April, and remain until about the middle of October. During the whole of this period they derive the more important part of their food-supply from sap-yielding holes which they drill through the bark of red maples, red oaks, poplars, white and gray birches, the white ash and some other trees and shrubs. In every instance where I have found a well-marked drinking-place established by the sap-suckers, humming-birds have been regular attendants upon it during the summer months.

I have paid hundreds of visits to these "orchards" of the sap-suckers, and have watched them for many hours at a time. By so doing I have ascertained that, as a rule, one individual humming-bird seems to acquire a sort of easement in the sap-fountains of the woodpeckers, and if another ruby-throat attempts to drink sap at his spring, violent resistance is offered.

The humming birds, at "orchards" where they are not molested by the woodpeckers, drink scores of times in the course of the long summer day. When not drinking they are usually perched on twigs a few yards from the holes, keeping their nervous heads wagging from side to side while watching for intruders. In a

few instances I have seen humming-birds perch upon the bark below the holes in order to drink long without being forced to keep their wings moving while enjoying the sweet sap.

In some cases I have placed small birch-bark cups upon trees frequented by the sap-suckers and their guests, and in each such instance the humming-birds have been as quick as the woodpeckers to discover the diluted maple syrup with which the cups were filled, and to drink it in considerable quantities. I remember seeing one drink for sixty seconds, with a ten seconds' rest in the middle of the minute.

Most of the "orchards" at which I have seen humming-birds as visitors from year to year have been composed of red maples or gray birches. At one of the birch orchards I shot two humming-birds, a male and a female, in order to ascertain whether more of their kind were visiting the holes. Only nine minutes elapsed before another was at the holes drinking.

FRANK BOLLES.

Cambridge, Nov. 28.

Sense of Direction.

SOME time in the fifties, in Oregon, a party of prospectors took a mule team, wagon, and camping equipage on a prospecting tour. In order to be correct in their local geography, and to retrace their steps should they find anything worthy of a re-visit, they took a civil engineer along, who took the bearing of every course and the distance was chained.

When they gave up the prospecting enterprise, their route had been so tortuous that they decided to take the direct route for the home camp. The engineer footed up the latitudes and departures of the courses run, and made a calculation of the course home, and all struck for the home camp. When they reached the end of their course, night had overtaken them, and they found themselves, not in the home camp, but in the woods, with no objects or land-marks that any of the party could recognize.

As the engineer took no "back-sights," or check bearings, he said that local attraction somewhere in their journey had thrown him off a little and that they were in the neighborhood of the home camp. At this, the driver turned one of his mules loose, which went directly to the camp, about three-quarters of a mile distant. As the mules were not allowed to run at large, for fear of wandering off or being stolen by Indians, this mule had never before been over that route, and must have had a sense of direction. It was a joke on the engineer which he did not relish, though it had great "staying qualities."

JOHN T. CAMPBELL.

Rockville, Ind., Nov. 14.

Electrical Phenomena on the Mountains of Colorado.

IN *Science* for Sept. 23, Mr. O. C. Chariton describes a mountain experience, and inquires if it is common or dangerous.

The peculiar buzzing and crackling sound, the standing of the hair on end, etc., are extremely common on the mountains of Colorado. The prospectors, miners, and drivers of pack trains to the high mines (above 11,000 feet) live in the midst of these electrical phenomena, and often find much amusement in observing their effect on the average "tenderfoot," especially when lady tourists, as not seldom happens, find their long hair slip from the fastenings and stand up like the fabled head-dress of the Furies. I have repeatedly heard the sounds at elevations between 6,000 and 7,000 feet, but they are much more noticeable at higher elevations, where they are sometimes terrific. They sometimes mark the tension of the air just preceding a discharge of lightning, but in general they are harmless. I have many times noticed them proceeding with hardly any interruption while the lightning was leaping from cloud to cloud overhead. They are caused by the passage of an electrified cloud, and the effect is rather worse when one is in the midst of the cloud. On these mountains the manifestation of intense electrical phenomena is seldom seen except when there is hail or pellet snow, or the most violent summer showers; and the latter usually have hail in some part of the storm. The loudest buzzings I have ever heard came while a