

for the study of Meteorological phenomena, the natural enthusiasm with which he has embraced this particular department of scientific investigation, and the admirable manner in which the practical working of the necessary experimental observations is conducted under his direction, are the subject of remark with every one who has the pleasure of visiting the Observatory. But it is not alone with the advantages which he possesses, and with the success of his management of them, that he is content. Every subject of inquiry connected with his peculiar duties, and which bears in any degree upon the evolution of magnetical laws, becomes in turn the object of careful inquiry in all its minutest details; hence the origin of the Reports before us. Four years ago he suggested that the Non-commissioned Officers of the Royal Artillery should be permitted, under the sanction of the Officers in command, to make observations on the Aurora Borealis, at the several stations throughout the Province. These observations would appear to have been also undertaken and maintained with great spirit by the Officers of the Hudson's Bay Company. The results of these observations, as far as they go, are given in tabular form, and the statistics appear to have been collated for this purpose with the greatest care and industry. The principal objects in view in keeping these registers are thus stated in the first report:—

“1.—To ensure the observation of every Aurora which should be visible in Canada, so as to afford a better criterion of the actual frequency of the phenomenon than can be given by observations at any one station.

“2.—To supply the means of judging how far variations of the magnetical elements, shown by the instruments at Toronto, during cloudy weather, might be connected with Aurora visible elsewhere.

“3.—To furnish data for computing the height or distance of the luminous region from the earth.

“4.—Lastly, to throw some light on the question, whether or no the same Aurora is not sometimes seen under considerably different forms by observers stationed not very far asunder.”

It will at once be perceived that the great end of these observations is to investigate the relation between the Auroral and magnetic phenomena. The results obtained are singular and instructive; but whether they will be sufficient to elucidate the true nature of those wonderful and beautiful manifestations of glory remains yet to be proved. Enough, however, has apparently been ascertained to show that certain laws govern these phenomena, and that we may in the course of time be able to arrive at a tolerably accurate acquaintance with them. What would seem to be established as yet is as follows:—

“That the Aurora Borealis does not appear with equal frequency at