

Altitude too
great.

that altitude and in that latitude there would be no severe summer frosts, even were there no evidence against that hypothesis. There is, however, abundant evidence that in many years there *are* severe frosts in June, July and August, frosts which, if they do not entirely destroy the growing crops, render wheat unfit for flour-making purposes. Here and there through this report there are references to low temperatures in 1903 and other years, and among the two score or more old residents of that region with whom I talked in 1903 there was not one who believed that the parts of the plateau country with which he was acquainted were fitted for wheat-growing. Some of them thought some other part might be, but not the part with which they were acquainted. The general altitude of the whole upper plateau, which includes Grande prairie, is about the same as that of Edmonton, two degrees further south. Wheat is grown at Edmonton but not always with success, and there is no good reason for supposing that the conditions are any better at the same altitude near the Peace river. Much has been made of the supposed prevalence of warm western winds, but whatever effect these winds may have in the winter, they are not noticed in the summer, and strange to say, Dr. Dawson noted that summer frosts usually occurred in calm nights following a high wind from the *west*. He says, after referring to frosts on August 13th and August 20th:*

Summer frost. 'These frosts occurred in very fine weather, following a day of strong westerly winds, the result of which is to remove from the surface of the earth the whole of the lower heated layer of the atmosphere. This succeeded by a calm and cloudless night with transparent sky causes the thermometer to sink below the freezing point before morning. When not preceded by strong wind, mere transparency of the atmosphere seldom or never leads to frost in August in this district.'

My own observations showed that whenever the night was calm and the atmosphere transparent the thermometer fell to 35° or lower, but in 1903 cloudy nights were the rule. It has been supposed also that the days are very warm, but though no regular maximum temperatures were registered, the thermometer was frequently read when the temperature seemed very high, and it was never found on the plateau to reach 80°. A peculiarity noticed by both Dr. Dawson and myself was that the temperature fell very early in the afternoon, the average mean temperature for the 24 hours occurring about six o'clock, instead of at eight o'clock, as is the case in most places. Dr.

*Report of Progress, Geol. Surv. of Can., 1879-80, p. 73 B.