

Sierra Nevadas, making a total mountain barrier of fourteen hundred miles, excludes the warmth and moisture of the Pacific winds from the central areas of the continent, while the interlocking valleys of the Columbia and the Missouri on the route of the Northern Pacific Railroad, and of the Frazer and Columbia Rivers and the Saskatchewan on the route of the Canadian Pacific, facilitate the ingress of the Chinook, as the warm western wind of the Pacific Coast is called, to the plains of Montana, Alberta and Saskatchewan. But it is only in latitude 55° to 56° that the remarkable condition is found of the Peace and Liard rivers, rising on the western slopes of the Rocky Mountains, and breaking through this barrier on their way to the Mackenzie, after interlocking at their sources with the Skesna and the Stikeen, which flow into the Pacific."

ANOTHER EXPLANATION OF THE CHINOOK.

It is objected by some that the lower elevation of the mountain barrier and the passes through the same is not sufficient to explain the occurrence of the Chinook upon the plains to the east of the mountains. The writer has observed the effect of this wind as far east as the James River Valley in North Dakota, where upon one occasion he saw eighteen inches of snow utterly vanish in thirty-six hours without previous melting, and without leaving a trace of mud behind. It was simply licked up by the tongue of the wind and carried away into the air. At the same time there were hundreds of miles of snow-covered mountains to the west over which this wind had

blown on its course from the Pacific and upon which the snow remained unmelted. Dr. G. M. Dawson, of the Canadian Geological Survey, says: "The complete explanation is to be found in the great quantity of heat rendered latent when moisture is evaporated or air is expanded in volume, but which becomes sensible again on condensation of the moisture or compression of the air. The pressure in the upper regions of the atmosphere being so much less than in a lower, a body of air rising from the sea level to the summit of a mountain range must expand, and this, implying molecular work, results in an absorption of heat and consequent cooling. When the air descends again on the other side of the mountain range its condensation results in an increase of sensible heat equal to one degree Centigrade for each hundred meters. It thus becomes easy to understand how the Western Territories may be flooded with air nearly as warm as that of the coast, though it has traveled to them over a region comparatively cold." The explanation of the Chinook, whatever it may be, is of much less importance than the fact of its existence.

GREATER LENGTH OF DAYS.

Light, by the chemical action which it produces, is scarcely less important than heat in the growth of vegetation, and in these far northern latitudes the days are very much longer than they are further south. In latitude 56 degrees, which may be taken as the average of the Peace River country, sunrise occurs on June 20 at 3.12 A.M., and sunset at 8.50 P.M., being a difference in the length of day-



PLOUGHING NEAR GRISWOLD, MANITOBA.