

which the latter are quite helpless. On the 17th, an aurora of remarkable brilliancy was observed at a place 8 miles south of Lake Roseau; besides the usual bow and streamers, an arch of light about two degrees wide was formed passing through the zenith from east to west. A constant wave or pulsation of luminosity advanced from the eastern end of this arch and travelled slowly by successive impulses along it. The effect lasted about three quarters of an hour, and although there was a very bright full moon, the aurora quite held its own in vividness.

A few Chippewa Indians were seen about here, but they appeared to be an idle set, without anything striking in their appearance or bearing. They subsist chiefly on fish caught in the lake, a resource which does not always keep them from want.

After completing the observations for latitude, Captain Featherstonhaugh set his men to cut east and west tangent lines (i.e., straight lines tangent to the parallel) through the woods, the intention being to cut about ten miles to the east, and then to work westward as far as Pointe d'Orme. It was soon found, however, that the muskegs or swamps which lay to the east were so continuous that progress during the open season would be very slow indeed, and it was resolved to work only westward, in which direction the trees were much larger, and there was some sort of foothold to be obtained. These muskegs are four or five feet deep in many places; they have on the surface a skin of sod which scarcely supports the weight of a man, and when it is pierced the muddy water rises in the hole nearly to the top. A person breaking through goes down to his middle, and has some trouble in getting out again. The westerly line being continued, considerable difficulties were shortly experienced in the work, the frost which set in on the 10th November having been unfortunately preceded by snow, which for some time prevented the ground from freezing. The men were unskilled in the use of the axe, and the swamp-holes between the trees, which it was impossible to avoid, kept them constantly half wet through. This, with the thermometer at zero, or but a little above it, could not fail to be a serious thing, and, besides the direct suffering from the cold, many were attacked with diarrhoea, one man becoming dangerously ill with congestion of the liver. Anxiety was always felt also as to the safety of the supply teams, which had to traverse 100 miles of open country, where a snowstorm might prove dangerous. The cutting, however, was continued, and after about 4½ miles had been completed through the spruce and tamarac, the party, to their great satisfaction, emerged on to the open surface of the great Roseau swamps. This was then just frozen over, and, as far as the eye could reach, the glare stretched away to the horizon towards the south and south-west, with small tufts of grass here and there, and thin wreaths of snow curling up before the wind that swept across it. Desolate as the aspect was, the change was welcomed from the wet and fatiguing work in the woods, and the line was quickly taken across the open, the sick man being sent back to head-quarters, and the guide directed to find a direct road along the parallel from Pointe d'Orme. A day or two of the great cold now set in, giving the finishing touch to the swamps and rivers, and causing the party to