

currently reported at Edmonton that 80 or 90 days is the period for which feeding is necessary, and I was told in Edmonton by a man who had wintered at Spirit river that his cattle had been fed for only 80 days. However this may be, the fact remains that the usual period is between four and five months. The Chinook winds, so often spoken of as prevailing here and at Grande prairie, do no doubt sometimes occur, but their influence is very slight, and they usually do more harm than good. They are seldom strong enough to take off all the snow, and the wet grass when frozen is not relished by the horses, which run out most of the winter. When cattle are allowed out after a Chinook they always get in poor condition, and the general belief is that they require more hay to restore them to their former condition than if they had not been allowed to run at all.

Hay making. When I was at Spirit river towards the end of August every one was engaged in hay-making. Some of the settlers were cutting upland hay while others were cutting "pea-vine" which grows very luxuriantly in open spots between thickets. There are few hay marshes within reach. In most years upland hay may be obtained anywhere, but this sort of grass cannot be cut to advantage more than two years in succession on the same ground. On the prairie itself and in the open woods in its vicinity, there is ample hay for the needs of settlers, but if it were made a ranching country large herds of cattle running free would destroy much grass that is now available. In 1903 the months of August and early September were so wet that it is doubtful whether the settlers succeeded in curing enough hay for their needs.

Character of soil.

Throughout the Spirit River country, and indeed nearly everywhere south of the Peace river, the subsoil is an impervious clay. The soil above this is generally four or five inches deep; sometimes a very little deeper and at Bremner's place at least, three years cropping has exhausted its fertility. Grain planted on this soil in 1903 was not worth cutting, while immediately beside it on new breaking there was a fine crop. The analysis of this subsoil made by Mr. Shutt would indicate that if worked into the soil by degrees it would prove productive, but so far it has been untouched, the settlers contenting themselves with cultivating the loamy surface soil.

Leaving the settlement at Spirit river, August 3rd, we travelled westward for about five miles across prairie; the trail then enters a forest of spruce and poplar. It is from this place that most of the house-logs used at Spirit river are procured. The prairie is less than a mile wide when the trail leaves it. The trail continues through the forest to Rat creek, but as one goes westward the spruce becomes