

River, root crops can be preserved in pits at a depth of 6 or 8 feet, the winter frost not reaching them ; but this cannot be done in Mackenzie River.

24. A belt of country, fringing the arctic shore, and varying in breadth from 100 miles on the west to 200 miles on the east, is called the barren lands, simply because devoid of trees, which are killed by the salt sea breezes. South of this line the whole country is entirely covered with spruce and pine forests. These are firs and stunted in the north and they increase in size towards the south till on the Peace River and Liard or Upper Yoma they mingle with poplar or cotton wood and tamarac. Among these pine forests are numerous lakes and swamps and more or less underwood of willows or other scrub. The ground is a good deal covered with a white moss known as reindeer moss, because the chief food of the reindeer.

25. On the barren ground as trees will not grow, so neither of course will crops. The soil is partly rocky or stoney, and partly mossy. On the rocks grow the edible lichens known as "Tripe des Roches." Unless some edible or medicinal extract should have or may be made from those mosses or lichens, the barren grounds are not known to have commercial value. They form the permanent home of the musk-ox and the summer haunt of the reindeer, which are hunted there by the Indians with success and waste. The deer leave the forests in summer to escape the flies, and resort to them in winter for shelter from the wind.

26. Barley and potatoes have been grown as far north as the Arctic Circle, on the Mackenzie and Yukon Rivers, though the crops are hardly safe from frost at that latitude. East of the Mackenzie, the most northern place at which I am aware potatoes have been grown is Fort Ray, Great Slave Lake, latitude 62, 30.

27. Wheat has been grown at Fort Simpson, Mackenzie River, latitude 62, and ripens there in a favourable season, and yields good grain. For a permanent crop and profitable increase it needs careful cultivation and a selection of the most desirable seed.

28. On the Mackenzie, Indian corn will not ripen, but it might be used green.

29. Barley, wheat and potatoes are planted and sown on the Mackenzie River immediately after the spring plowing, which is done after the melting of the winter snows, as soon as the soil is dry enough. At Fort Simpson this is generally from the 20th to the 25th May. At Good Hope, about the 1st June. The reaping will be some time in September, according to the season. The potatoes are taken up at the first sign of frost, about the middle of September.

30. Spring opens on the Mackenzie River from the 1st to the 15th May. Within the Arctic Circle, say of Red River, about the first week in June. At Peel River the low cranberry bushes may be found in flower as the snow melts off them, so powerful is the unsetting sun, even through the snow.

31. It is obvious that in such case the ground is only fit for seeding after the flowering of the berry bushes. Even at Great Slave Lake you may see the buds burst on the gooseberry bushes one week, the leaves fully out the next week, so speedy are the spring's advances. I should say the seeding time is usually about the same as the flowering time.

32. Wheat, September ; barley, September ; rye and oats, untried ; potatoes and turnips, September ; Indian corn, does not ripen ; strawberries and gooseberries, August.

33. There is a liability to summer frosts on Mackenzie River as on Athabasca, Peace River and the Saskatchewan, but I should think with care potatoes would yield their seed about ten-fold in three seasons out of four ; barley, its seed five-fold in three seasons out of four ; and wheat, its seed five-fold in two seasons out of four ; but selected seed, careful cultivation and dressing of the land is required. Turnips and other quick-growing crops and beet answer well.

34. The frosts in these months are generally only occasional night-frosts, but are at times enough to wither the potato stems. The length of the summer day, approaching perpetual sunlight near the Arctic Circle, hastens vegetation, and makes the night frosts, if any, very short till towards the fall. The present year, 1888, there were night frosts at Great Slave Lake in July, but probably none at Peel River after the 1st of June, there being perpetual sunlight from that date to the middle of July.