591 miles north of Winnipeg, Ladoga wheat has been raised weighing 60 lbs. per bushel; oats, 41¾ lbs.; six-rowed barley, 51¼ lbs.; and spring rye 57½ lbs. per bushel.

From Fort Providence, in Mackenzie, 710 miles north of Winnipeg, have come good samples of oats and spring rye; but the quantities received were too small to permit of their weight per bushel being determined.

From Fort Simpson, 818 miles north of Winnipeg by latitude, Ladoga wheat has been obtained which weighed 62½ lbs. per bushel. In this instance a small percentage of the grain was injured by frost. This is the furthest point north from which samples of cereals have been received. The time between sowing and harvesting in these far northern districts is in some instances less than it is at the Experimental Farm at Ottawa. At Dunvegan the grain was sown May 7th and harvested August 21st, giving a growing period of 101 days. The same sorts of grain grown at Ottawa, taking the average of three years, require 106 days. At Fort Vermillion the time between sowing and harvesting was also 101 days. At Fort Providence 108 days were required to bring grain to maturity, from June 1 to September 17, and at Fort Simpson the wheat was sown June 7 and harvested September 22, giving a growing period of 107 days.

The long days are an important factor in bringing about this result: the influence of increased periods of light hastens the ripening of cereals very much. This view is supported by facts brought together during a careful series of observations made some years ago by a distinguished Russian investigator, Kowalewski. He experimented with spring wheat and oats, growing them in different parts of Russia, from the far north at Arkangelsk to the southern province of Kherson. He found that in the higher latitudes the grain ripens in a shorter period than in the more southern districts, the difference varying at different points from 12 to 35 days. This author attributes the earlier ripening in the north largely to the influence of light during the long summer days. He also believes that the short seasons of quick growth have gradually brought about in these cereals an early ripening habit. In our experience with early ripening cereals, this habit is a permanent characteristic which they continue to manifest when grown in localities where the summer season is longer.

POSSIBILITIES

Leaving now any further discussion of these enormous northern territories, let us turn to the smaller and better known districts nearer the lines of railway. Of the 171 million acres in Manitoba and the three Provisional Territories, which are said to be suitable for cultivation, a very small part is yet under crop. In Manitoba there were 2,039,940 acres under wheat in 1902, and 1,134,385 acres in other farm crops, making a total of 3,174,325 acres. In the three Provisional Territories there were in all 625,758 acres in wheat, and about 363,879 acres in other crops, making a total of 989,637 acres, which, added to the acreage under cultivation in Manitoba, makes in all 4,163,962 acres. From this comparatively small area over 67 million bushels of wheat and nearly 59 million bushels of other grain were produced.

In 1903 the season was less favourable, and while there was an increase in the acreage of land devoted to wheat in Manitoba and the Territories the total production has been about 52 million bushels of wheat with about 54 million bushels of other grain. While the land prepared for crop in 1904 is considerably in excess of that for 1903 it is not likely to exceed 5½ million acres in all, which is not much more than three per cent. of the land suitable for agriculture within the limits referred to.

Some comparisons may help us to understand the possibilities connected with these large but sparsely occupied districts.