

The winters are bitterly cold along the Mackenzie River, averaging 16° below to 25° below zero in January, while in Yukon Territory the winters are surprisingly mild, varying from 2° below zero in southern Yukon to 21° below zero at Dawson. In Yukon Territory a winter month may be under the influence of air modified by north Pacific waters before passing overland or, on the other hand, the invasion may be by intensely cold air of north Siberian quality, from the Beaufort Sea. The character of winter months in Yukon probably exhibits greater swings from mild to intensely cold than any other section of Canada, unless perhaps southwestern Alberta.

In summers when there has been drought on the southern Prairies the considerable load of water-vapour which has passed over the Prairies without precipitation has caused rather heavy rainfalls on these northern plains. These same wet summers show a distinct tendency to be warmer than usual with undoubtedly good growth of grains and grasses. Such years have led to considerable argument about the northern limit of wheat-growing. In favour of this argument the average length of the continuously frost-free period can be quoted but it should be kept in mind that practically all observing stations have been situated at trading posts located on waterways—the only means of access from one region to another from the earliest days. This suggests that the frost-free period would be materially shorter had the stations been situated on tablelands away from the north-flowing rivers. The deltalands of the Mackenzie River are represented by Fort McPherson and Aklavik which have average frost-free periods of 70 and 65 days, respectively: up the Mackenzie Valley there is considerable variation—Fort Norman 45 days, Fort Good Hope 52 days. Fort Resolution, on one of the great lakes of the Mackenzie, has an exceptionally long frost-free period of 93 days, Hay River, somewhat similarly situated, has 87 days, Fort Simpson 84 days but Fort Smith well down in southern territory has only 56 frost-free days. These periods represent the average interval between occurrences of the temperature of freezing point. If specially early-maturing varieties of spring wheat, which can stand a temperature three degrees below freezing without serious injury, were planted, these periods could be increased by approximately 10 p.c., and crops could be grown with more success at places along the waterways where the soil is suitable. More will be known about these possibilities in the near future since an agricultural experimental station has been established at Pine Creek in southern Yukon. Information may be obtained from the Federal Department of Agriculture on the success of trial plantings of various varieties of spring wheat at missionary stations along the Mackenzie Valley during the latest ten or fifteen years.

Precipitation.—The annual precipitation is 10 or 11 inches from the mouth of the Mackenzie to Fort Norman and rises to 13 inches at Fort Simpson and Fort Smith. Along the Athabaska River at Fort McMurray the average exceeds 17 inches but on the lower Peace River at Fort Vermilion the annual amount is about 12 inches. Of this amount about 5 inches is provided by the water-content of freshly-fallen snow. Generally, there is more than one inch of precipitation per month only from May to the end of October. The precipitation peak occurs normally in August at the northern stations and in July upriver beyond the Arctic Circle. These northern plains, therefore, have the same over-all precipitation picture as the Prairies but the summer peak is very much lower than the average of the latter. It is a peculiarity of the Great Plains of the continent that the first sharp increase of monthly precipitation begins in March in the Panhandle of Texas, U.S.A., and moves northward through the following months to reach the annual