

The following statement gives typical temperatures and precipitation of this Region:—

TEMPERATURES  
(Fahrenheit)                      TOTAL PRECIPITATION

Station	Mean		Highest Lowest		Average in Inches			Average Number Days	
	Jan.	July	on Record		Jan.	July	Annual	Rain	Snow
	Lennoxville, Que.....	12.8	66.2	99	-48	3.46	4.12	39.56	104
St. Catharines, Ont.....	26.0	71.1	104	-12	2.30	2.39	27.03	99	37
Ottawa, Ont.....	11.9	69.6	102	-35	2.93	3.39	34.23	98	47

### The Southern Prairies

There appears to be a widespread impression that the Canadian Prairies are a nearly level plain and that, therefore, the climate must vary little over its whole extent. Actually, this Region might better be described as a very wide slope deeply cut by rivers and marked by escarpments and plateaux and merging in the west with the foothills of the Rocky Mountains.

**Temperature.**—On the Prairies in winter, while all cold spells are caused by an outbreak of polar air, the cold wave may pass quickly southeastward to be replaced by a flow of much milder air from the west or southwest. On the other hand, with a steady flow of very cold air crossing the polar seas into Canada, the cold spell may last several weeks with little relief. In some winters a month may elapse with polar air mostly moving southward by way of the north Pacific Ocean and entering the Prairies after considerable warming during long travel. There have been cases where such a month has averaged more than 25°F. warmer than a normal winter month over a large area in Alberta, and 10°F., or more, warmer over the remainder of the Prairies. These cases do not exhaust all the possibilities, for polar air has in some winter months followed mostly a path across the Arctic Archipelago to Hudson Bay and northern Quebec. In such cases, while Manitoba and Eastern Canada experience very cold weather, Saskatchewan and Alberta are mainly fed by warmed returning polar air from the southeast or Pacific polar air from the west. The character of the prairie winter is, therefore, very variable from year to year, and dependent upon the path and direction of air flowing through the polar regions and the amount of precooling which it has undergone before reaching the Prairies. The great variations in summer temperatures are indicated in the remarks upon the lack of dependability in rainfall on p. 52. Great daytime heat is generally the accompaniment of drought. Contrariwise, although the advent of cool waves may bring welcome rainfall, they may also bring at least scattered frosts. These will follow the rain after the warm, moist air has been lifted off the land and replaced by the cool dense air of the cool wave. During the clear following night the coolest air gravitates to all places which are relatively lower than the surrounding land. If there is no further drainage possible and there is no wind to mix the bottom air with the warmer air above, the continued loss of heat by radiation from the land to the transparent sky may bring frost to the depressed places before sunrise. Only a limited portion of the Southern Prairies has an average continuously frost-free period of 100 days or more. This period diminishes northward to less than 70 days immediately north of the North Saskatchewan River. There are, of course, some places in an otherwise rather frosty region which have an unusually long frost-free period. In these places the lower land is occupied by a water-area, such as a lake