

climatic or other causes is problematical, but the presence of isolated patches of tree growth in situations well protected from fires would seem to indicate that repeated burning accounts, at least in part, for its present treeless state. The underlying rocks are of the Tertiary and Mesozoic ages. The climate of Alberta is extremely variable in winter, due to a warm, dry wind known as the "Chinook" which blows from the south and southwest and extends its influence from the international boundary to the Peace river and eastward to Regina in Saskatchewan. In summer the isotherms run almost due north and south in Alberta. Rainfall varies from 15 to 20 inches. The temperature in Manitoba has an absolute recorded range of 150° F., with a mean range of 71°. Saskatchewan and Alberta are more temperate, especially where they are affected by the "Chinook." North of the treeless prairies is a region, largely unexplored, covered at first by a comparatively light forest growth which toward the north and east gives way to the sub-Arctic "tundra"—a region of muskeg and bare, glacier-worn rocks of the Laurentian and Pre-Cambrian types.

These Laurentian rocks in Canada form the Archæan or Canadian Shield, with a distinct type of topography. This rock formation covers a huge irregular triangle with its apex near the Thousand islands in the St. Lawrence, from which point one arm extends northwesterly to the mouth of the Mackenzie river and the other northeasterly down the St. Lawrence valley to include the Labrador peninsula. This entire region has been reduced to a peneplain condition by repeated glacial action which has worn down the high elevations and scoured out most of the soil except in isolated depressions. It is covered with innumerable lakes, muskegs or bogs and rivers. The climate in the northern portion is as a rule too severe for continuous successful agriculture, but this region is covered by a comparatively light forest growth gradually thinning out toward the north and toward Hudson bay and James bay to the "tundra" type referred to. The southern portion of the shield is to a great extent agricultural land, actual or potential, much of it being still heavily forested.

**The St. Lawrence and Atlantic Slope.**—The basin of the St. Lawrence and the Great Lakes contains a variety of topographical and geological types. The north shores of lake Superior and Georgian bay, the upper Ottawa River valley and the southern part of Labrador are part of the Laurentian Shield already described. Here the climate is tempered in part by the presence of the lakes and the gulf of St. Lawrence, but is nevertheless severe and variable. To the south, soil and climate improve, and the southwestern peninsula of Ontario, the north shore of lake Ontario and the St. Lawrence valley are all essentially agricultural land. The rock is of sedimentary origin of the Palæozoic age.

The Maritime Provinces, with a general slope toward the Atlantic, are varied in topography and geology. The climate resembles that of southern Ontario, being modified by the presence of the ocean. Precipitation is above 35 inches annually. This region supports a type of forest similar to that of the southern portion of the Archæan Shield.

## 2.—Main Types of Forest Growth.

Physiographic, climatic and soil conditions in Canada generally seem to favour the coniferous type of forest. While the more fertile portions of Ontario, Quebec and the Maritime Provinces supported a heavy virgin growth of hardwoods, the greater part of Canada's forest area is covered with spruce, pine, balsam, Douglas fir and other coniferous softwoods. Three main groups of forest growth in Canada follow the main physiographic divisions already mentioned. These groups are the Cordilleran, the Great Plains and the Eastern forests.