

followed by more temperate and southern ones. Generally speaking, the Canadian flora, as it exists today, may therefore be said to be composed of immigrants that took possession of the country after the glacial period and established themselves in botanical provinces in accordance with their specific requirements. These botanical provinces, generally referred to as zones, are briefly described in the following pages.

**The Arctic Zone.**—Botanically, the arctic zone is the region lying north of the tree line. In Canada it extends far to the south of the arctic circle, especially in the eastern parts of the Dominion. Its southern limit is, roughly, a line running from the estuary of the Mackenzie river to the mouth of the Churchill river on the west coast of Hudson bay. East of Hudson bay, the tree line, i.e., the southern boundary of the arctic zone, runs from about lat. 56° on Richmond gulf to the mouth of George river on the eastern shore of Ungava bay, and from there in a southeasterly direction along the coast of Labrador to Hamilton inlet. South of Hamilton inlet a narrow strip along the coast as far south as the strait of Belle Isle and extending a short distance to the west from there is also barren of real trees and therefore has an arctic aspect. This strip can hardly be included in the arctic zone proper, however, although a few arctic plants may be found there; the lack of trees and the barren appearance in general are caused by the arctic current which flows from the north along the coast and through the strait of Belle Isle.

The vegetation in the arctic zone is generally of a low-growing and even dwarfed type. The woody plants, even when half a century old or more, reach a very inconspicuous height in comparison with their next of kin farther south and are often prostrate or even trailing along the ground. In the more northern parts of the arctic zone the most conspicuous woody plants are willows and dwarf birches. Further south, on the tundra, i.e., the more or less boggy lowlands north of the tree line, the woody plants are chiefly represented by members of the blueberry family.

In respect to herbaceous vegetation, the arctic flora of Canada is very closely related to the so-called circumpolar flora in general. Not only are there many species in arctic Canada which occur all around the north pole, but in general characteristics the Canadian arctic plants are very similar to arctic plants elsewhere, particularly to those growing in Greenland and arctic Europe.

A striking form of growth encountered in many species is the dense, compact, bunched type, which especially is found well developed on rocky ground in the northern sections of the arctic zone. This form of growth is characteristic also of arid and semi-arid regions in hot climates, and at first sight it may seem strange that it should also be found in the arctic. The arctic zone, however, from a plant physiological point of view, is somewhat akin to arid regions farther south. In the latter regions the bunch growth is generally considered to be associated with a shortage of water supply in the ground, and to some extent the same may be said of arctic areas. The ground may apparently be well supplied with moisture, but the plants relying upon the moisture are often unable to utilize it on account of the temperature in the ground being at times so low that the water-absorbing parts of the plants are incapable of functioning.

Compactness of growth is also displayed by a number of plants which, although not growing in defined bunches, form dense and often rather extended mats. On the other hand, there are quite a number of species which grow neither in bunches nor in mats; these are particularly common on the tundra.

Practically all arctic plants are perennials. Owing to the shortness of the season they are often caught by early frost while the blossoms are still undeveloped and before their fruit has ripened. Indeed, many species regularly enter the winter