

in this condition and hibernate with flower and leaf buds in an advanced stage of development. When the returning sun again wakes them up to renewed activity, they are therefore ready to spring into blossom over-night, as it were, and to present a surprisingly rapid development of vegetative as well as of floral organs.

The Sub-arctic Forest Zone.—The sub-arctic or so-called coniferous forest extends, in the east, from the arctic zone southward to a line running approximately from Anticosti to the south end of lake Winnipeg. This line is practically identical with the northern limits of the white and the red pine. West of lake Winnipeg the sub-arctic forest is bounded to the south and west by the prairies and the foothills of the Rocky mountains, respectively. The Gaspé peninsula and sections of New Brunswick may also be included in the sub-arctic forest zone.

The sub-arctic forest, as the name indicates, is decidedly boreal. The trees do not reach any imposing height and the number of species which make up the forest is small in comparison with the number occurring in the hardwood forest zone to the south. The sub-arctic forest is largely coniferous in character, the black and white spruce being the dominating trees. Of the other coniferous trees the Banksian pine is the most important species. It reaches perfection in the western part of the zone and constitutes the chief source of supply of lumber for the northern prairie region. The other trees characteristic of the zone in general are aspen and balsam poplar, white birch, larch, and balsam fir. Between the gulf of St. Lawrence and lake Winnipeg, white cedar, white elm, and ash are occasionally met with, but these trees cannot be properly considered as belonging to the sub-arctic forest.

Perhaps the most striking characteristic of the sub-arctic forest is the abundance of berry shrubs such as gooseberries, currants, blueberries, raspberries, yellowberries, and high-bush cranberries. Another is the remarkable uniformity, in general character as well as in species, exhibited throughout the zone. This lack of variety is especially marked in the vegetation of the bogs, which are very numerous throughout the zone, the species encountered in the bogs of any one part of the zone being characteristic of practically the whole sub-arctic forest.

The herbaceous flora of the sub-arctic forest is also remarkably uniform throughout, and hardly a species is found that does not occur either in the arctic zone or in the hardwood forest zone to the south. A noteworthy exception to this rule is a small water lily, in fact the smallest of the water lillies, which is found in this area only.

The sub-arctic forest zone is as yet almost undisturbed by settlers except in some sections of the so-called clay belts of northern Quebec and Ontario. It forms a vast reserve of national wealth and may in the future furnish the chief supply of wood for the pulp and paper industries in eastern North America.

The Hardwood Forest Zone.—The hardwood forest zone includes all eastern Canada south of the sub-arctic forest, with the exception of a small region in southern Ontario. It is characterized chiefly by deciduous trees, the principal ones being basswood, sugar maple, red maple, black ash, white ash, white elm, yellow birch, red oak, burr oak, and beech. Of the coniferous trees white pine, red pine, hemlock, and white cedar are the most important. The underbrush, although very variable and made up of a great number of species, is generally rather scanty and becomes conspicuous, as a component of the forest, only along its borders or where the woods are open. Among the most typical shrubs may be mentioned service berry, moosewood, purple flowering raspberry, sumach, poison ivy, and arrowwood.