

## PHYSICAL CHARACTERISTICS OF CANADA.

Anticosti to the southern 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 prairie and the foothills of the Rocky Mountains, respectively. The Gaspé peninsula and the greater part of New Brunswick may also be included in the sub-arctic forest.

As the name indicates, the sub-arctic forest is decidedly boreal. It is largely coniferous in character, the only deciduous trees occurring throughout the region being poplars and white birch. The sub-arctic forest is as yet almost undisturbed by settlers. It forms a vast reserve of national wealth, and is destined in the future to furnish the chief supply of timber for the pulp and paper industries of eastern North America, as Black and White Spruce (*Picea mariana* and *P. canadensis*) are dominant trees. Of the other coniferous trees, the Banksian Pine (*Pinus Banksiana*) is the most important. 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 Poplar (*Populus tremuloides*), Balsam Poplar (*P. balsamifera*), White Birch (*Betula papyrifera*), Larch (*Larix laricina*) and Balsam Fir (*Abies balsamea*). Between Lake Winnipeg and the Gulf of St. Lawrence, White Cedar (*Thuja occidentalis*), Elm (*Ulmus americana*) and Ash (*Fraxinus nigra*, *F. americana*) are occasionally met with, but cannot be considered characteristic of the sub-arctic forest.

On the whole, the sub-arctic forest covers a rolling country with numerous bogs and lakes in the depressions. Perhaps its most striking character is the abundance of berry shrubs, including Gooseberries (*Ribes oxycanthoides*), Currants (*R. hudsonianum*, *R. triste*), Blueberries (*Vaccinium canadense*), Rock Cranberries (*V. Vitis-Ideea*), Raspberries (*Rubus strigosus*), Yellow-berries (*R. Chamæmoris*), High-bush Cranberries (*Viburnum Opulus*, *V. pauciflorum*) and others.

The vegetation of the bogs shows but little variation, and the species encountered in the bogs of one part of the zone are characteristic of practically the whole sub-arctic forest. A number of species occurring on the tundra further north reach perfection in the bogs of this zone forest. Among the leading bog plants may be mentioned: *Ledum groenlandicum*, *Kalmia polifolia*, *Andromeda glaucophylla*, *Habenaria hyperborea*, *Epipactis repens* var. *ophioides*, *Menyanthes trifoliata*, *Utricularia americana*, *Pedicularis groenlandica*, *Eriophorum* and *Carex* species.

On the whole, the flora of the sub-arctic forest is remarkably uniform throughout, and hardly a species is found that does not occur in the Arctic zone or to the south. A noteworthy exception to this general rule is *Castalia tetragona*, the smallest of the water lilies, which in Canada is found in the sub-arctic forest only.

**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, extending between the shore of Lake Erie and a line running approximately from Toronto to Windsor.

There is little cultivated land in Eastern Canada north of this