

*nigra*), pine (*Pinus Banksiana*) and larch (*Larix Americana*); while beneath the coniferous forest are often extensive *Sphagnum* swamps.

The mean summer temperature of the forest region is 10°—15° C.

In the southern warmer parts the ground thaws out every summer, but in the more northern parts it is certainly permanently frozen, just as it is in the Klondike District in the Yukon Territory.

Poplar, birch and pine extend northward as far as the heavy forest extends, while larch and the two species of spruce extend northward to the northern limit of trees, becoming small and dwarfed before they finally disappear. Their northern limit extends north-westward from Fort Churchill on Hudson's Bay in a fairly regular line, but narrow tongues of forest extend northward of this line on the banks of the northward flowing streams which take their rise within the forested area. It is not an uncommon occurrence to find many of the trees in the most remote northern grooves dead, but again most of these are alive, and as far as I could determine they furnish no evidence of a change in climatic conditions in recent times.

As far as my observation goes, *Sphagnum* bogs are only found in the forest region, within the influence or shade of coniferous woods. They are very extensively developed in the wooded lowlands of northern Manitoba, overlying the lacustrine clays of Lake Agassiz, and they extend northward to the northern limits of the forest where they are often associated with *Chrystosphenes* or buried sheets of ice formed by springs.

Up to the present time the alluvial deposits and bogs have yielded little or no palaeobiological evidence of the spread of living animals through this region in past Glacial times, and the trees that are found in the swamps are of the same species as those that are growing on them at the present time.

All the evidence at hand therefore would seem to show that there had been a gradual change since the Glacial Period from a colder to a warmer climate, sufficiently moist to permit of forest growth.

The country known as the 'Barren Lands' or more properly the 'Treeless Lands' lies north and north-east of the forest, and is the coldest part of the North American continent, with a mean annual temperature below -8° C., and a mean summer temperature below 10° C. Its surface is rough and stoney, and is for the most part covered with sedges, grasses and lichens. Trees and *sphagnum* bogs are conspicuously absent.

Evidence of the former existence of trees on this country might have been largely destroyed, but if *sphagnum* bogs had ever been formed in it, they would be there at the present time. The absence of such bogs, and of any traces of the former existence of forest, would clearly indicate that the Barren Lands have not experienced any warmer climate since the end of the Glacial period than they are getting at the present time.

Thus the results of all the observations made up to the present time throughout north-western Canada point to the conclusion that there has been a fairly continuous amelioration of the climate since the retirement of the Keewatin and Labradorian glaciers.