

FAUNAS OF CANADA.

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Whether the fauna of the western hemisphere was derived from that of the eastern, or *vice versa*, as is contended by various authorities, there is a close relationship between them, and one of these contentions is certainly true. Geological evidence shows that in previous ages types now found in but one of the great continental circumpolar divisions were once common to both. Old and now submerged land connections between the continents have been postulated both from zoological and geological evidence, and a more or less complete continuity of land throughout the northern hemisphere, in former times, must be acknowledged before present American biotal conditions can be thoroughly understood. That this connection was in the far north and in what is now arctic or sub-arctic climate did not prohibit a continual interchange of warmth-loving species, for the presence of coal in very high latitudes points to milder if not tropical or sub-tropical conditions where now we find perpetual snow and ice. We must therefore conceive of a pre-glacial time when tree-ferns and other luxuriant coal-producing forests occupied extreme northern lands, and such animals as elephants, horses and other warmth-loving species could spread from one continent to the other.

This intercontinental connection must have been made and broken numbers of times by the recurrence of glacial periods which covered this country with ice to well south of the present Great Lakes and must at times have formed barriers to the passage of life across the far north more complete even than we find today. During these periods of alternate isolation and connection there was ample time and opportunity for wide divergence in development in the faunas of the separated land masses, the extinction of connecting links and the occurrence of many complexities to confuse the clear picture of the historical succession until today we find a nearly identical circumpolar fauna at the north progressively breaking up and differentiating into peculiar and special New and Old World forms as it proceeds south.

Having considered the history and consequent relation of North American life to that of the world in general, we can take up the details of its distribution on our continent. The general trend of geographical distribution in Canada is from southeast to northwest. Ocean currents have much to do with this. Our east coast is chilled by the cold arctic current coming directly down from the polar ice fields through Davis strait, and the west coast is warmed by the grateful temperature of the great final sweep of the Japan current. When we realize that the barren Labrador coast of the gulf of St. Lawrence is in almost the same latitude as southern British Columbia and is slightly south of the most southerly point of the British Isles, we can see what a great and fundamental influence these ocean currents have on the distribution of life upon our continent. Elevation is another factor that has a determining influence on climate and the distribution of animal life. It is well known that high mountains