

## VII.—CLIMATE AND METEOROLOGY.

1.—The Climate of Canada.<sup>1</sup>

Canada, the northern half of the continent of North America, stretching from the Atlantic to the Pacific, and from the United States boundary to the Arctic ocean, covers an enormous territory, most varied in altitude, in distance from the sea, and in topographical features. It follows, then, quite naturally, that climatic conditions are very varied; and since lofty mountain ranges parallel the coast of the Pacific at no great distance from it, it follows also that the continental type of climate predominates, while only the immediate coast-line of British Columbia possesses a climate of the marine type such as that of northwestern Europe. The Atlantic provinces, although subject to a modified marine type of climate, do not display conditions so mild as those of Europe, on account of the cold Labrador current of the northwestern Atlantic and the prevailing easterly movement of the northern anticyclones.

The most southerly point of the Dominion is Pelee island in latitude  $41^{\circ} 40'$  (corresponding to that of Rome, Italy), while lands with some agricultural possibilities exist in the valley of the Mackenzie river, near the Arctic circle. The foothill lands of Alberta are at an altitude exceeding 3,000 and even 3,500 feet in the southern portion of the province, while to the north they fall away to 1,000 feet along the lower reaches of the Peace river. Eastward the general elevation of 2,000 feet extends to eastern Saskatchewan, while in eastern Manitoba altitudes are generally less than 1,000 feet. Farther eastward the general slope is to sea-level, along the Great Lakes and the St. Lawrence river to the Atlantic ocean; while northward the land slopes slowly in the far West along the Mackenzie river to the Arctic ocean, and in the East much more quickly to the level of Hudson bay.

Between Hudson bay and the St. Lawrence the watersheds are divided by the Laurentian hills, whose general elevation is about 1,000 feet, although the highest elevations near the sea in the northeast reach 6,000 feet. On the Pacific side of the Dominion, the Andean chain with peaks ranging from 10,000 to 13,000 feet cuts off the British Columbian coast and the interior valleys from the great plains of the West already mentioned. These western prairie lands are far removed from the tempering influence of the ocean, while the great mountains of the west and the great inland lakes of the east play important roles in modifying climatic conditions.

**British Columbia.**—This province, spreading over eleven degrees of latitude, with an average width of 700 miles and some districts of great elevation, has, within its own limits, climates which differ greatly from one another. The littoral region is mild and humid, while the interior valleys and plateaus, on account of the distance from the coast and the higher altitude, have colder and drier winters.

Vancouver island occupies in the Pacific ocean somewhat the same position in regard to the American continent that Great Britain occupies in the Atlantic towards Europe, besides lying between nearly the same parallels of latitude. The climate, as in all other parts of British Columbia, varies much with the orographical features. The annual rainfall along the western coast of the island is very great, generally exceeding 100 inches, while on the southeastern tip it is scarcely more than a third of that. A comparatively dry period extends from May to September, while copious rains fall between September and March. The mean monthly and mean annual temperatures correspond very closely with those of England; the summers are quite as long and severe frosts scarcely ever occur.

<sup>1</sup>Contributed by Sir Frederic Stupart, Director of the Meteorological Service, Toronto.