

Camp (1941) expresses the opinion that "East of the Continental Divide, *V. ovalifolium* is a Pleistocene adventive, but with a series of disjunct (relic) stations the result of post-Wisconsin-times events. . .". The viewpoint expressed here is possibly applicable to various species in other groups, primarily western in distribution, which have eastern disjunct outposts. The great series of terminal and recessional moraines with their unsorted and talus-like materials—and at particular stages in the climatic and vegetation succession during each recovery of the floristic mantle—must have been ideal avenues for transcontinental plant migration. In any event, this broad morainic belt would have served as an ideal refugium south of the ice for those rare plants that, even today, are confined chiefly to the unstable sea-cliff and river-gravel habitats, free from invasion by the forest species that have crowded them out elsewhere. It may be that some of the less hardy rare plants used this southern migration route for their eastern migration after being eliminated in the broad intervening area, while the hardier ones persisted and accompanied the arctic circumpolar species in their southward march before the advancing Pleistocene ice-sheets. In advancing what has become known as his "rainbow theory", Marie-Victorin (1938) writes, "May not most of the so-called Cordilleran plants be just arctic migrants that for some reason or other have become extinct in the Arctic and have persisted at one or both ends of their migrating trails". Wynne-Edwards had already pointed out that the simple fact emerges that the flora of the arctic and subarctic zones of North America is made up of types that are circumpolar and types that are not circumpolar, and further that "Some of these plants have wide limits of climatic tolerance, occurring through a wide latitudinal range, in which case their American distribution takes the form of an arch spanning the continent from the Cordillera to the St. Lawrence by way of the Arctic; while others are more narrowly confined, the hardiest occupying the crown of the arch and least hardy its two ends, whereby their ranges are disrupted into western and eastern centres".

The Atlantic Coastal Plain element in the flora of Newfoundland and Nova Scotia again emphasizes the importance of historical factors in the consideration of problems of plant distribution. Fernald (1918) notes the occurrence especially in sandy areas and acid bogs of Newfoundland of such characteristic species of the Coastal Plain of New England and New Jersey as the small grass-like fern, curly-grass (*Schizaea pusilla*), beachgrass (*Ammophila breviligulata*), various sedges, pipewort (*Eriocaulon septangulare*), a rush (*Juncus pelocarpus*), white fringed orchid (*Habenaria blepharoglottis*), broom-crowberry (*Carema conradii*), beach-heath (*Hudsonia ericoides*), huckleberry (*Gaylussacia dumosa*) and two asters (*Aster nemoralis* and *A. radula*). Surprising, however, is the absence in Newfoundland of such typical eastern Canadian plants as virgin's-bower (*Clematis virginiana*), common milkweed (*Asclepias syriaca*), large-toothed aspen (*Populus grandidentata*), striped maple (*Acer pensylvanicum*), sugar-maple (*Acer saccharum*), thoroughwort (*Eupatorium perfoliatum*) and certain goldenrods (*Solidago juncea* and *S. squarrosa*) and asters (*Aster acuminatus* and *A. macrophyllus*). He also notes a similar absence of the common moose, red deer, porcupine and spruce partridge, animals of the forests of the relatively close Canadian mainland to the west. Fernald advances the following explanation: ". . . the flora of Newfoundland, except such species as have been derived across the narrow Straits of Belle Isle, has not reached the island by ocean currents or by winds, especially from the west and southwest: for, if these factors were of importance in carrying the western and southwestern plants to Newfoundland, we should expect such species as I have named and which are all abundant at the eastern edge of Canada to have reached Newfoundland amongst the first invaders. In explaining the migration to Newfoundland of a large element from the Atlantic coastal plain of the United States it has been necessary to reconstruct the Tertiary continental shelf, which is now depressed as a shallow bench off the Atlantic coast of America: and from the botanical and zoological evidence, as well as from recently published geological evidence, it now seems perfectly settled that the continental shelf formed in the late Pleistocene and even later a nearly continuous although somewhat interrupted floor from New Jersey and southern New England, by way of Sable Island and the Grand Banks, to southern and eastern Newfoundland. And upon this floor the southern flora and fauna migrated to Newfoundland; but the unfavorable conditions of a sand-floor