and river-gravels of the Gaspe Peninsula of Quebec) included in its flora a large number of species separated from their main area in the western Cordilleras by more than two thousand miles. Mountain avens (*Dryas drummondii*), for example, occupies a large area extending from north-central Alaska to Great Bear Lake and Lake Athabasca south to Oregon and Montana. It is known otherwise only from Quebec (Gaspe Peninsula; Anticosti Island; the North Shore of the Gulf of St. Lawrence; Lake Mistassini) and western Newfoundland, with an intermediate station in the 'driftless' region about the Great Lakes (Slate Island, Lake Superior). Fernald lists a large number of additional western and endemic (of local or restricted range) species centring about the Gulf of St. Lawrence, the endemics being mostly very closely related to their western counterparts.

Fernald's contention, later known as the *nunatak theory* (from the Eskimo word for a mountain projecting out from an ice-cap), was that the areas in which these western plants or representatives of western plants are found today escaped glaciation during Pleistocene times, the plants surviving there as relicts but being wiped out more westerly as far as the Cordilleras, except often for stations in the driftless area about the Great Lakes known to have escaped glaciation. This theory appeared, at the time, to provide a most satisfactory explanation to many puzzling problems of plant distribution in Eastern Canada. However, field investigations have since drastically reduced the number of species with such disjunct areas, although the problem posed by the remaining "Cordilleran" species in the east still remains.

The extreme localization in Eastern Canada of many of the western species seemed to Fernald to be proof of a more or less senescent condition attendant upon their great age. They appeared to have lost the capacity to migrate, if not actually to propagate sufficiently for continued survival. However, Marie-Victorin (1938) pointed out that several western plants, when grown in limestone beds at the Montreal Botanical Garden, increased their area and thrived vigorously until crowded out by weeds at the termination of the experiment. It had already been noted by several botanists, including Griggs (1934a; 1940), that weeds are often found in the same habitat as rare plants. Species of both groups are adapted to survive on such typical rare plant habitats as unstable sea-cliffs and river-gravels but would be eliminated if the erosion cycle were able to reach a stage permitting establishment of the normal forest flora of the region. The rare plants share the sun-loving character of weeds. The limestone cliffs, because of their splintered and angular type of weathering (with formation of extensive talus slopes at the base) will still bar conquest by the forest for an indefinite period. The rare plants, like the weeds, appear as a whole to be quite as well equipped for seed or spore dispersal as many plants of more widespread occurrence but are quite unable to withstand competition with the forest species.

Wynne-Edwards (1937) notes the very significant fact that eastern Canadian plants of western affinity are found almost entirely upon calcareous or magnesian rocks of a basic reaction, as opposed to the siliceous, acidic rocks of the Canadian Shield. Such calcareous formations are characteristic of the Cordilleras, the Arctic Archipelago, and the mountains of northeastern Labrador (and also the driftless area about the Great Lakes), the whole pattern coinciding quite neatly with the rainbow-shaped area attributed above to non-glaciated regions of Canada. He believes that the disjunct ranges of the rare plants are better explained as resulting from their lime-loving nature rather than from differences in their Pleistocene history.

The rare plants as a whole appear to be quite as well equipped for seed or spore dispersal as most plants of more widespread occurrence. The minute spores of the rare ferns are as definitely adapted to wind distribution as those of all ferns. The cotton-tufted seeds of the willows and the plumed fruits of mountain avens (*Dryas drummondii*) furnish almost equally good examples. Their restricted area in the east would seem to be a result of the scarcity of suitable habitats rather than of a state of senescence because of old age. The tables given by Scoggan (1950) showing the results of determinations of available