

GEOLOGY IN RELATION TO AGRICULTURE IN CANADA

eastern Quebec sufficient soil has been retained in the valleys to render the land arable.

The great fertility of the reclaimed marshes of Nova Scotia and New Brunswick is due to the fine silt deposited by the tides by which they were formerly submerged.

St. Lawrence Lowlands.—The St. Lawrence lowlands consist of the generally level, arable land south of the Laurentian plateau. This lies on both sides of the St. Lawrence above Quebec, reaching south to the international boundary, occupies the eastern part of Ontario, east of a line running southward from a point about 50 miles west of Ottawa, and forms that portion of Ontario lying southwest of a line extending from Kingston to Georgian bay.

These lowlands are among the most fertile of Canada's agricultural sections. They are underlain by flat-lying shales and limestones which yield readily to weathering. The physiographic features are favourable, and the residual material derived from the decomposition of limestones and shales results in a fertile, calcareous, clayey soil. The loose surface deposits are of great depth, in places exceeding 200 feet.

The lowlands were overridden by the great glacier. This glaciation, however, had apparently slight denuding effect on this part of the country, but served to mix the loose materials resulting from the weathering of the shales and limestones, and contributed the potash-bearing ingredients transported from the granitic areas of the Laurentian plateau.

In some sections, as in the vicinity of the Great Lakes, sedimentation took place in large lakes produced by the blocking of the outlets of the present lake basins by lobes of the retreating glacier. Recent sedimentation took place also over southwestern Quebec and eastern Ontario during submergence beneath the sea about the close of the Glacial period.

Plain Region.—The plains of Manitoba, Saskatchewan and Alberta are underlain by nearly flat-lying shales and sandstones. These have weathered down into the clays and clay loams that have made the plains one of the great wheat-producing districts of the world. This part of Canada was also subjected to glaciation, but the great proportion of the surface deposits is derived from the underlying rocks.

Some large stretches of the Plains region were submerged by glacial lakes in which fine silts and clays carried down from the surrounding land and introduced by glacial streams were deposited. Such is the very fertile Red River valley. This is a part of the bed of a great lake that extended from the Laurentian plateau west to the Manitoba escarpment; it reached southward into the United States and northward 100 miles beyond Lake Winnipeg.

The great fertility of the prairie provinces is due in part to the mineral constituents of the soil and in part to the great accumulation of nitrogenous organic matter, the remains of ages of vegetable growth.

Cordilleran Region.—The Cordilleran region, extending from the Rocky mountains to the Pacific ocean, is underlain by igneous rocks of various kinds and by sediments that have been folded into mountain