

with them materials of productiveness which were foreign to this region. These were naturally deposited where the river first widened into a shallow lake, and gave birth to the fertile alluvium of which the first and second class soils on the St. John river in a great measure consist. In the second locality, on the head waters of the Bay of Fundy, the lofty tides of that Bay, thick with red mud—the spoils of the soft rocks which they wear down in their daily ebb and flow—have, like the waters of the St. John, brought upwards the materials of other formations, and have overlaid with most fertile soil the more barren surface natural to the rocks on which they rest. It is a natural warping with foreign materials—similar to that performed by our own Humber and Trent on the adjoining moor-lands, or by the river Ombrone upon the Tuscan Maremma—that the existence of these first-class soils in this portion of New Brunswick, are for the most part to be ascribed.

It is unnecessary, I think, to follow this subject at present into further detail; I shall therefore briefly sum up the results to which the study of this case has led us in regard to the relations of Geology with Agriculture, and to the causes by which these relations, naturally close, may be materially modified. These results are—

1st. That the actual agricultural value of the soil in a district may differ very much from that which pure geology alone would indicate. This is shown by the map before us, in which, although the soils special to the formation do predominate, yet soils of all qualities are seen extending often over very large areas.

2nd. That the physical structure of a country has much influence in causing the production of such diversities of soil upon, or from, the debris of rocks of the same age and kind.

3rd. That the existence of flat table-lands; for example, or of depressions having no natural outlet, will cover extensive portions of such a surface with swamps and bogs, in climates, which favour the accumulation of vegetable matter. Thus, as in Ireland not less extensively than in New Brunswick, the economic-agricultural influence of geological structure may be disguised or wholly hidden by the purely superficial covering of decaying vegetable matter.

4th. That, generally speaking, the soil of a district of uniform geological character will improve in the direction of the natural drainage and river outfalls. Where rains fall or snows melt, it is the tendency of the flowing water to enrich the lower at the expense of the higher country, and thus to establish differences of soil which did not originally exist. At the same time the final result of such action will depend very much upon the nature