

or less gravel intermixed, and is in some places stratified, in others a true till. It is found in flat districts or in low inland valleys where it is often covered only by the vegetable layer referred to on a previous page, which is here thicker than upon the ridges. Where there is sufficient slope to afford good drainage, the clay soils are usually fertile, but as they are wanting in organic and calcareous matter they require frequent applications of fertilizing material to render them productive. The low flat or undulating tracts, however, need, besides this, a proper system of draining. Without it, except in very dry seasons, their productiveness is much less than that of the drier grounds.

Below the 200 feet contour line the soil is, generally speaking, much superior to that inland. The surface has usually a gentle slope towards the Gulf shores and on this account is better drained, while along many of the river valleys, alluviums prevail. Bay du Vin, Black River and Napan valleys, more especially the latter, contain land of excellent quality, the upper portion of the soil partaking somewhat of a loamy consistency. On the north side of the Miramichi estuary, from Newcastle to Bartibogue, the coarser material of the surface deposits only seems to be left upon the slopes, although immediately bordering the coast there are strips of good land. Further north, between Bartibogue and Tabusintac, the coastal area is generally low and wet, but contains some arable tracts. The back settlements here are, however, located upon good dry soil. Between Tabusintac and Tracadie a wide sandy plain occurs, mostly unsettled, but around the latter place and at St. Isidore, excellent tracts of farming land are found.

Shippegan and Miscou Islands have but few settlers, and these devote most of their time to fishing. The land is low, and most of it poor and wet.

Returning to the Miramichi River, we find many fine tracts of land occupied and in a good state of cultivation upon the Middle and Lower Carboniferous areas along the North-West and South-West branches. The slopes afford good drainage and the soil is deep and capable of being raised to a high state of fertility by judicious and careful tillage.

For the improvement of the soils overlying the Carboniferous area, <sup>Improvement of soil.</sup> lime appears to be the great *desideratum*. Considerable quantities of it are now applied in a slaked state. Near the coast of the Gulf and along the estuaries, inexhaustible supplies of mussel-mud are obtainable, which contains a large percentage of lime and constitutes a valuable fertilizer. This material is, however, only used yet to a limited extent.

The flora of the district occupied by the Carboniferous rocks is *Flora or sylv.* closely similar to that described in report M (Annual Report, 1886) as occurring in eastern Gloucester. the distribution of the species in

Soil of Carboniferous area below 200 feet contour line.