

posited in the coves bordering
bedded. A study of these
formation of the marine Post.

SURFACE DEPOSITS.

al composition of the rocks of
fluence upon the character of
agricultural capabili-
and to exist between the
immediately underlying them;
which I shall presently refer
ade to show how these loose
at they were produced by a
ated as follows:—(1) The
surface of the country chiefly
shifting and grinding down
abrasion of the rock-surface
and icebergs; and (3) the
these materials by the action
marine, through which they
ty, sand, or gravel beds, etc.
soils of the province are
which rest upon and are
adjacent rocks: and (2)
ent, of transported materials
rocks immediately beneath.
of the great Silurian plain
across the northern part of
ates. They also occur upon
ense of the latter district it
intermingled with a certain pro-
from the Pre-Carboniferous

deposits under consideration
aleaceous slates which they
ee, owes its fertility. These
us dykes of felsite, dolerite
ch has been intermixed with
l deposits mantling this tract
in the interior, and while in
in others there is a large
e intrusive rocks mentioned.

The land is high, as already stated (800 to 1,000 feet), except along the immediate coast of the Baie des Chaleurs, and having a rolling surface is generally well drained by the numerous streams which traverse it.

On the Carboniferous plain a tolerably deep and uniform covering of surface deposits is found, principally furnished from the destruction of the underlying strata. Disseminated through them, however, but chiefly scattered about over the surface, occur boulders derived from the Cambro-Silurian and Pre-Cambrian rocks to the west, and which have been transported thither by glaciers or the force of running water as stated above. The general surface of this region is low and flat, rising gently from the coast to a height of 400 to 600 feet. The rivers have cut deep trenches or channel-ways through it, and usually their banks have gently rounded, flowing outlines forming long slopes, a result of the softer nature of the rocks. On the level tracts between the river valleys, swamps and peaty barrens extend over large areas, in which the soil and sub-soil seem, so far as examined, to be composed of materials such as (1) peaty matter, (2) clay, gravel, etc., and (3) till, the whole constituting cold, barren land. From the character of the rocks which have furnished the surface deposits overlying the Carboniferous area, it will be seen that they contain little or no lime in their composition, and hence the soil is, except along the river banks, not by any means to be compared, as regards fertility, to that constituting the Silurian uplands.

In the southern part of the province, the relations between the superficial covering and the rocks beneath occur under somewhat different conditions. The geological formations there traverse the country in comparatively narrow bands, and the ice of the glacial epoch, having crossed these nearly at right angles to their strike, considerable rock *débris* has, by this means, been moved from the surface of one formation southward to that of another. To such an extent has this transportation of materials prevailed that it is only on the hills and ridges that the loose materials bear any direct relation to the rocks beneath. There has, therefore, been a greater intermingling of the materials belonging to the different geological formations of this district, those of each belt overlapping, as it were, the adjoining rocks to the south, although in a very irregular manner. It is also observed that the quantity of material derived from each rock-formation in this, as well as in other parts of the province, is directly in proportion to the yielding nature of each kind of rock to the sub-aerial and other erosive influences to which it has been subjected, and that consequently those which were more easily decomposed have furnished the largest quantities of surface materials and *vice versa*. The Carboniferous sandstones and shales, as well as the slates of the Silurian series, have suffered

Deposits over-
lying Carboni-
ferous area.

Different geo-
logical relation
of soils in
southern New
Brunswick.