

In my recent examination of the tertiary deposits of Charlotte county, large tracts of marl were discovered; this substance, by a proper application, cannot fail to prove important to the agriculture of that part of the province. Besides those, immense quantities of freestones, which are used in architecture and for grindstones exist on the shores of Chignecto Bay and Cumberland Basin; of the latter, great numbers are shipped annually to the United States. There are also several salt and other mineral springs in the interior of the country.

Extending in a south-west direction from Northumberland Straits and the Gulf of St. Lawrence, and crossing the river St. John, there is one of the most expanded coal districts ever discovered. The coal district occupies a large area in the central portion of the province, but its boundaries have not yet been correctly ascertained.

I have just completed a section of one of the diameters of this broad coal field, which extends from Richibucto in a south-west direction to the Oromocto Lake, a distance of one hundred and thirty miles. The out-croppings of the coal have been found at a number of places, and one of them is worked to a limited extent on the Salmon River, at the head of the Grand Lake.

During the present month, I have been highly gratified at the discovery of the old red sandstone and carboniferous limestone underlining the southern side of a coal basin extending to Fredericton and Gagetown, where it is evident coal may be obtained in large quantities.

These coal measures are covered in some places by new red sandstone, gypsum and secondary limestone, which afford a most excellent soil; and throughout the whole province there are extensive tracts of land with rich intervals, which will grant a certain reward to the labours of the agricultural settler. Many of these tracts are still covered with excellent timber, and so far as I am informed, they are ungranted by the Crown.

Of the geological features of the north-western sections of the province I am unable to make any report, as they have not yet been explored. It is nevertheless probable that they contain minerals equally as valuable as those of the eastern districts.

I have, &c.

To Captain Tryon, Private Secretary,
&c. &c. &c.
St. John, 29 September 1838.

(signed) *Abraham Gesner.*

REPORT.

To his Excellency Major-general Sir *John Harvey*, K.H. and C.B., Lieutenant-general and Commander-in-chief of the Province of New Brunswick, &c. &c. &c.

May it please your Excellency,

AGREEABLE to your Excellency's directions, I have proceeded to commence a geological survey of the province; and beg leave to report, that since the 1st of June last, I have been engaged in exploring the county of Charlotte and the coast bordering on the Bay of Fundy.

It affords me much pleasure to state, that from the examination already made, the most useful and important results are likely to follow, both in regard to the agricultural and commercial interests of the country; and the science of geology itself cannot but be more or less improved by the facts discovered in a province hitherto unexplored.

The most important substances already found in the county of Charlotte are marl, granite quarries, iron, lead, copper ores and mineral springs. Specimens of the granite and ore are herewith forwarded to your Excellency.

I first discovered the marl upon the shore of the St. Croix, but it has since been found at numerous places along the coast and in the interior of the country. It contains a large quantity of the carbonate of lime, and therefore almost every kind of soil will be improved by its application.

A beautiful variety of granite occurs at the Warring River, where it empties into the St. Croix. At Oak Point also an abundance of this useful rock may be quarried, and readily shipped down the Scodie. Iron appears frequently in the state of oxides, and combined with sulphur; from the former, ochres for pigments can be manufactured, and the sulphuret will afford both alum and copperas.

Lead ore has been discovered at Campo Bello, but during a diligent search on every part of the island, I was unable to find a vein of sufficient thickness to admit of profitable running.

On an uninhabited part of the shore between the mouths of the Digdeguash and Magaguadavic, I found a narrow vein of copper ore; this I am confident is connected with a much richer deposit, as the rock for several miles in circumference is highly metalliferous.

There are several mineral springs in the neighbourhood of St. Stephen's, their waters will be analysed before my general report is made, and as early as time will allow. The geological features of the country are extremely interesting, a range of mountains extending from the St. Croix to the St. John has been thrown up by volcanic eruptions, which have changed the character of the secondary rocks, and broken up their once level strata.

The tertiary deposit which embraces the marl, abounds in marine shells and zoophytes; all these shells are of recent species, excepting three; these are extinct in all the climates of the earth in its present condition.