

THE GLEANER.

And Northumberland, Kent, Gloucester, and Restigouche Schediasma.

Volume XIII.

Nec araneorum sane textus ideo melior, quia ex se fila gignunt, nec noster vilior quia ex alienis libamus ut apes.

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THE GLEANER.

From Dr Gesner's Fourth Annual Report of the Geological Survey of the Province of New Brunswick.

TOPOGRAPHICAL DETAILS.

Continued.

Northumberland is one of the largest counties of the Province, and, when considered in reference to its soil, minerals, fisheries, and timber, it is a district of much importance to New Brunswick. The Miramichi, a large and beautiful river, passes directly through the county, while its branches, extending in all directions, afford great facilities of transportation from the interior. This river is nearly two hundred miles in length. Having descended with considerable rapidity from its principal sources, it becomes navigable for large vessels; and finally opens into a spacious bay. The banks of the river are settled to the distance of a hundred miles; the mouths of the principal branches are also thinly inhabited, but, remote from the streams, the country is in its original wilderness state, and thousands of acres of land, capable of cultivation, are covered with dense forests. Upon the main river and many of its branches there are some excellent intervals; even these, in many situations, remain uncleared. From fifteen to twenty miles above the mouth of the river are three towns, with a number of handsome villages adjoining. Chatham, Newcastle, and Douglas Town, are places of great trade in timber, ships, and fish, and the country has improved rapidly, notwithstanding a most calamitous fire that destroyed two of its towns and a number of villages only a few years ago. Large sums of money have been expended in the erection of steam and water mills for the manufacture of lumber; and a spirit of enterprise has prevailed that is unrivalled in any part of America. Agriculture and mining have however been almost altogether neglected, and it is only of late that advances have been made in those important branches of industry. These few hints are thrown out for the information of persons abroad, into whose hands this Report may fall; and although they may not be considered considered to be of a geological nature, they form an important outline of the inquiry under consideration.

The whole of the shore, from Point Esplanade to the town of Chatham, is composed of the sandstones and conglomerates of the coal field. The rocks are elevated but a few feet above high water mark, and the fine settlements along the shore are almost level with the waters of the Gulf. The islands of Miramichi Bay are composed chiefly of sand, which have been thrown up by the waves and currents.

The most remarkable features of this part of the county are the evidences of a depression of coast having taken place within a comparatively recent period. In the vicinity of Bay des Vents, and Lower Bay des Vents, extensive peat bogs are seen at low water, reaching upwards under the sea, being buried beneath its waves. I examined this peat carefully and found it to be of super-marine growth,—how far these bogs extend beneath the bay, and have been covered by beds of sand and gravel, cannot be readily ascertained,—there is reason to believe however, that an extensive area of low land has been submerged, and the higher portions of it are now scarcely above the tide level. These facts appear most extraordinary when compared with those which show that the coast near Bathurst has been elevated,—but they are the result of geological changes and catastrophes, to which the earth has been subject ever since it was created, and became a revolving mass in the heavens.

Between Newcastle and Black River, on both sides of the main stream, the sandstones appear in cliffs from fifteen to thirty feet in height; and the strata are nearly horizontal. The upper layers of the rock have been acted upon by the frost, are much fractured, and frequently split into thin lamina. Near the water level they have suffered less, and they often appear in broad compact masses, capable of affording good freestones of large dimensions. The water is constantly wearing away the yielding rock, and singular grottoes, with deep notches, have been worn out along the level of the Bay. Excellent freestones may be procured from these strata. The new Bank at Newcastle, and a number of buildings at Chatham and Douglastown are built of these rocks. The freestones are readily quarried and cut,—and buildings composed of them have a venerable European appearance. Messrs. Gilmore and Rankin and the Hon. Joseph Cunard have employed them in the erection of their excellent mills. These freestones form a valuable part of the natural resources of the

county,—they are abundant and may be transported at a low rate. The brown and yellow varieties of this rock should not be employed in architecture, as they will not resist the weather,—the compact grey kinds are very durable.

Interstratified with these sandstones, soft shale and fire clay sometimes occur at the bases of the cliffs. In all these the fossil plants belonging to the coal period are common. Large trees have been changed into coal, lignite, iron pyrites, and sandstone. These trees are situated parallel to the strata, and sometimes form an irregular layer between them. Most frequently they extend in an east and west direction, and by being more readily acted upon than the sandstone itself, they have been worn out, and deep holes are left in the cliffs. Very often the whole tree has been changed into sandstone, except the bark, which, being converted into coal, encircles the fossil, as it did when both were in a living state. Ferns and coniferous plants are numerous, but none of the *caetacea* were observed. Wherever these fossils are found, the rock is of a brownish red color, from the presence of the peroxide of iron.

About five miles below Chatham, there is every indication of the existence of workable beds of coal: a small but perfect stratum of the bituminous mineral appears in the cliff, and on the property of Mr Williston; fine specimens of coal were found here, and accompany this Report. The abundance of fossils, the presence of shale and fire clay, always accompanying coal in these Provinces, and every other condition of the rocks, render it almost certain that coal may be obtained here at no great depth from the surface. Near the mouth of the Napan River, a conglomerate composed of small pebbles was observed reposing upon the sandstone. This conglomerate contains pebbles of the sulphurets of iron and copper. The casts of plants and their leaves are also seen here. The rocks in this quarter are covered with beds of sand, gravel, and sometimes clay, to the depth of ten feet, and erratic boulders are found upon the surface. The strata in general are horizontal; but there are instances where they are singularly contorted.

It appears that these strata, while they were in a soft state, were exposed to some force that moved them from their original horizontal situation.

The same sandstones and freestones, sometimes containing fossil plants, are seen at Newcastle, Chatham, Douglas Town, and on both sides of the river, as it flows from the south-west. A large fossil tree was discovered by the workmen of Thomas H. Peters, Esquire, in the digging of a cellar. The texture of the wood still remains perfect, and portions of the original plant are beautifully crystallized.

The tide in the Miramichi rises four and a half feet at common tides. The river affords a most safe and commodious harbour, averaging a mile in breadth. Although there are many pretty views on the sides of this noble stream, the scenery in general is tame, and without that bold outline that contributes so much to the beauty of more elevated districts.

I had received information of minerals having been discovered at several localities farther up the river; but those minerals, upon examination, proved to be unimportant. The coal evidently deposited in this part of the province, is the most valuable of all its mineral resources. From the great fires that have overrun the county of Northumberland, timber will soon become scarce, and the facilities of obtaining coal in the ballast of lumber ships, will cease to exist; the coal of this county will then be duly valued, and the peasant, in an advanced state of agriculture, will be extensively employed in fertilizing the soil.

At the Ferry, over the North West branch of the river, above two miles above Newcastle, the sandstones contain iron pyrites in nodules and irregular masses,—near this spot I observed an ancient Indian manufactory of arrow heads; several spear-shaped pieces of flint and jasper were found among the broken fragments buried in the soil. These sharp pieces of the hard stones were employed by the Indians in killing their game, and in warfare, before the Europeans had ever visited these shores.

Directly at the bifurcation of the river, there is a beautiful spot called Beaubair's Island, from M. Pierre Beaubair, a person of considerable importance among the early French settlers on the river. The island was the site of a French fort, the remains of which are still seen; and pieces of muskets and other instruments of warfare have been found around its sites. This part of the Island has long since been covered with a growth of forest trees.—Beaubair's Point, at the junction of the two branches of the river, was once the site of a French town and a large chapel,—human

bones are almost yearly washed from the grave yard by the encroachment of the stream. Both the island and the point are places of considerable note in the early history of New Brunswick,—they now present little of interest, beyond what arises from their antiquity, and the recollections they bring of the early struggles for power in a new country.

From some specimens received from the North west branch of the Miramichi, it appears evident that the westernmost part of the county is rich in minerals,—the exploration of that district was necessarily deferred until the next season. Several kind of mineral substances, from the tributaries of the south west branch were examined, but they are common to the sandstones, and do not differ from those already described.

About three miles above McKie's Inn and eleven miles from Newcastle, on the south west branch, coal appears in the south bank of the river,—it is but an inconsiderable stratum, belonging to one of the superficial beds already alluded to. The river at this place is a quarter of a mile in breadth, and rolls along in great grandeur and beauty. From the confluence of the south west and north west branches to Cochran's Inn, the distance is about twenty miles; the soil in this distance is a light yellow and white sand, sometimes mixed with clay: it is easily worked, and, under proper cultivation, produces good crops.

Coal has been found on the Renous and Bartholomew's rivers. These minor branches of the Miramichi were too low to allow canoes to pass at the time of my exploration in this quarter. Above the mouth of the former stream the intervals increase in quantity, and the soil near DeCastillon's fifty miles from Newcastle, is more argillaceous.

About one hundred and ten miles from the coast, the south west branch of the Miramichi makes a sudden turn to the north west, and receives the Taxes River and other streams. At this place a few years ago, a village was commenced, mills erected, and some land improved, by Mr Thomas Boies; the village, now called Boies Town, is situated on the main road between Fredericton and Miramichi, and at that point where the road communicates between the south west branch and the Nashwaak, a tributary of the St. John.

At this place a narrow seam of coal appears near the mills; grindstones and freestones may be quarried at numerous places on the banks of the river. The Miramichi, to this distance, passes through the rocks of the Great Coal Field of New Brunswick, already described. The terraces on this river have been noticed at page 58. The river is lined with thriving settlements; but, half a mile in the rear of these, the soil has never been cultivated, and thousands after thousands of acres of fertile land, with tracts of intervals on their banks, remain in all their primitive wilderness. When the advantages offered by the river, the quality of many large tracts of soil, coal, timber, &c. are all considered, it is surprising that this part of the Province should not have been settled long since. It is probably because the resources of the country have not been explored, and are unknown to emigrants, that they remove to foreign countries, while British soil remains neglected.

My principal object in following the main south west branch of the Miramichi to the portage, and thence down the Nashwaak to the St. John, was to complete another section of the coal field, which has been laid down on the geological map of the Province as far west as those rivers. It may be remarked here, that when the general features and characters of the coal formation have been accurately ascertained, it is only necessary to explore rigidly such parts as offer any hopes of reward, but in districts where there are indications of ores, a most careful search is necessary. Should it be remarked that our visit to this part of the country was short, compared with the importance of the district, an apology is offered above, and in the expenses, that in travelling on the north side of the Province were nearly two fold greater than in the southern counties.

About four miles southward of Boiestown, a ridge of greenstone trap has apparently been forced through the rocks of the coal measures. I had been informed that a great quantity of iron ore had been discovered upon the portage road; but it is probable that the ponderous trap has been mistaken for iron, of which I could find no indications at that place. The soil in the neighbourhood of Boiestown is light and sandy,—upon the trap rock it is greatly improved, and has supported a lofty growth of beech, birch and maple.

NASHWAAK.—The Nashwaak takes its rise near one of the sources of the south west branch of the Miramichi, and after having passed through an extensive tract of land

belonging to the New Brunswick Land Company, it empties into the St. John, opposite Fredericton. This river runs through a fine tract of interval, and the number of terraces upon its banks are evidences of the changes of level, the stream has, from time to time, undergone. These terraces have been noticed in another part of this report. All the lower part of this river passes through the sandstones and shales of the coal field; these rocks are seen on both sides of this beautiful valley, and often rise abruptly from its sides. In these sandstones and shales, the remains of plants are abundant, and may be seen in the cliffs, or the strata broken up in making the roads. Towards the sources of the Penac, Little River and Newcastle Creek, there is a large tract of good tillage land, with some intervals. This uninhabited district is also within the coal field, and the coal is frequently seen in the beds of the streams. Freestones and grindstones are also abundant in this quarter, and are known to be of an excellent quality.

Extending from the county of Northumberland in a south west direction to within ten miles of the St. John, a tract of land containing five hundred and fifty thousand acres, has been granted by Royal Charter, to the New Brunswick Land Company. This tract crosses the South West Miramichi, Taxes, Nashwaak, Keswick, and Mactaquack Rivers. Its most southerly part is situated upon the primary rocks of the range described in the first part of this report, and the whole of its eastern side is upon the coal field. The soil in general is good, and there are considerable areas of a superior quality. Notwithstanding the company have been unable to settle this immense tract to the extent they have desired, the situation for a colony of emigrants has been judiciously chosen, and is capable of being made a fine agricultural district. The foundations of two small towns have been laid. Stanley on the Nashwaak, and Campbelltown on the Miramichi, are beginning to flourish. Roads have been opened in all directions, and every encouragement is offered the industrious settler, who, from the above improvements, will find but few difficulties to encounter in establishing himself upon the soil.

The coal crops out on the Tay Creek and Nashwaak, and if properly opened and worked, would lay the foundation of extensive manufacturing. It might also be transported to St. John and be employed in the steam boats on the main river, where at present foreign fuel is chiefly used. The whole of this extensive establishment is under the control of Lieutenant Colonel Hayne, the Company's Agent, the kindness and urbanity of whom will be gratifying to all who may avail themselves of the advantages these lands offer for successful cultivation. I regret that I have been unable during the past season, to make a particular examination of the whole of this part of the County of York; it will, however, claim my earliest attention.

During my exploration in the northern counties of the Province, an excursion was made to Bathurst. By the aid of Thomas M. DeBlois and William Stephens, Esquires, Dr. Bishop, and other gentlemen of this place, many interesting facts were collected in regard to the geology of the county of Gloucester. This county and Restigouche, however, remain unexplored.

A visit was made to the mining establishment of an English company at Bathurst, conducted by Mr Stevens, a most enterprising individual. The first efforts of the company were directed to the mining of copper ore, veins of which are evidently contained in the slates of Tettagouche River. At present the mining of manganese is carried to some extent, and powerful machinery has been erected with sufficient water power, which will be directed to cleaning the ore, and other operations. The mine of manganese is situated eight miles from the town of Bathurst. The ore occurs in veins and disseminated masses in clay slate. Fifty tons were ready to be shipped at the time of my visit. The sterling price of the ore is stated to be £10 per ton.

This is evidently a mining district, and one of great importance to the country. I have also analysed two kinds of marl found in the county of Gloucester. They are superior in quality, and will soon be applied to agricultural purposes.

In concluding the present work, it may not be unnecessary to remark, that the county explored during the past season had never before been examined, in regard to its mineral wealth; and frequently where valuable ores had been supposed by some of the inhabitants to exist, those substances were found to be worthless in an economical point of view. In several instances the proprietors of lands have been urgent for me to spend much time and labour, where, from the nature of the rocks, it could not be expected that anything