

THE GLEANER.

And Northumberland, Kent, Gloucester, and Restigouche Schediasma.

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

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THE GLEANER.

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TOPOGRAPHICAL DETAILS.

Having given a general view of the Great Coal Field of New Brunswick, and noticed its rocks and fossils, I now proceed to enter upon the details of particular localities, and to point out the most interesting and important objects of the inquiry, as they were found to exist in the district under consideration.

On a former occasion an account was given of the Westmoreland Coal Field; and a probability was expressed that coal might exist on some of the rivers emptying into the Straits of Northumberland. My object in revisiting Shediac was to make some further examinations, at the places where the outcroppings of coal might be expected to appear: and it is satisfactory to know, that opinions previously expressed, in regard to coal in this quarter, have proved to be correct, from subsequent discoveries.

TEDISH RIVER.—The coal field on the Gulf side of Westmoreland, was found, upon examination, to extend farther to the southward than was before anticipated,—or it was found to be uncovered by the new red sandstone, to a greater extent than was ascertained during my first exploration in that quarter. The coal field may be said to reach to Great Shemogue, before its rocks are buried beneath those of the more recent red sandstone group.

A few weeks before my visit to Shediac, the settlers on the Tedish River had found some coal in a small brook; a cart load of it had been procured and consumed in the forge of a blacksmith: it was taken from an outcropping on a branch of the river, three miles from its mouth and near a French settlement. A brook that intersects the carboniferous strata has washed small quantities of coal from a superficial stratum, which may be seen on the farms of Peter Parrel and Paschal Le Blanc, on the new road opening between the settlement and Sackville.

The coal occurs in a thin stratum, about ten feet below the soil, and between beds of bituminous shale, met by fire clay above and below. The strata, so far as their inclination could be ascertained, dip to the north east, at an angle of 10°. The coal is from six to eight inches in thickness; it is highly bituminous and burns with a beautiful white flame, leaving but a small quantity of ashes. The uncleaned state of this part of the country, and the detritus of red sandstone covering the rocks to the depth of several feet, are obstacles to the discovery of the outcropping of the coal. The stratum already discovered is regular and perfect, and being accompanied with the usual shales, sandstones and fire clay, there can be little doubt that thicker deposits are situated at no great distance beneath the surface.

COUNTY OF KENT.—The Geology of this county is very simple,—and as almost all the rocks belong to one formation, it was by no means necessary to explore farther than there was hope of discovering coal in situations where it might be worked advantageously. The sandstones and shales, with coal, occupy the entire area of the county, except where those strata are covered by thin deposits of red sandstone.

COCACNE.—At Cocagne Harbour, the grey sandstones appear in thin strata,—about three miles from the bridge on a branch of the river, another stratum of coal was discovered by my son. The indications here were detached pieces of coal, which were scattered along the bed of the stream; the stratum whence these pieces had been removed was found in the bottom of a large brook, and beneath three feet of rapid water,—under these circumstances, it was impossible to measure its depth accurately; it is estimated to be two feet in thickness,—it may nevertheless exceed three feet in some situations. By sinking a shaft a short distance from the brook, so as to avoid the influx of water, this coal may be opened immediately. The quality of the coal obtained from the above place was very good, notwithstanding it was taken from a superficial stratum. The sandstones and shales along the brook contain the casts and remains of several species of plants belonging to the fossil flora of the Province.

Coal has also been discovered on the Buctouche River, and there can be no doubt that it may be obtained in this district in great quantities. The whole of the uninhabited country between these rivers and the sources of the Washademoak and Salmon river, consists of sandstones, shales, and conglomerates, and coal is frequently seen along the banks of the streams.

It may be remarked here, that the means

afforded for pursuing geological exploration, are only calculated to discover where coal and other minerals exist; but not to open mines. It is very evident that these coal strata are the most superficial, and therefore the least valuable deposits in the series to which they belong,—and from their small degree of inclination, it may be justly inferred that the thickest and most extensive deposits are still concealed in the earth. The value of these discoveries can scarcely be estimated in the present state of the country,—but when it is considered how important an article coal has become in commerce, navigation, manufactures, rail road communication, and almost all the arts, it may be seen what the ultimate results of these investigations will be in reference to the future prosperity of the Province.

Another important consideration arises from the proximity of this coal to the proposed canal to open a communication between the Bay of Fundy and the Gulf of St. Lawrence. This canal will pass over some part of the coal field, and will, I have no doubt, expose some of the coal strata. If coal did not exist on any of the shores of the Bay of Fundy, or its rivers, it might be transported through this canal to the American market, and to every part of the south side of the Province. A direct communication from St. John to Quebec by steam is another benefit to be taken into consideration, and the advantage of having fuel situated midway between those places is highly important. If there ever could have been a doubt of the vast advantages that would arise to New Brunswick and Nova Scotia, from the opening of this canal, it must vanish before a due consideration of all the facts,—and the benefits offered by the completion of the undertaking, are such as call for the greatest exertion of the friends of Colonial improvement. At present the narrow isthmus between the head of Chignecto Bay and the Gulf of St. Lawrence, prevents all kinds of trade between the opposite sides of the Province,—therefore the vast quantities of fish taken along the shores of the Gulf are carried to Halifax for a market. But these circumstances are unimportant, when they are compared with the trade that would flow in from all quarters through this channel,—to open and supply which, nature has afforded every requisite that can be required.

At the mouth of the Cocagne and Buctouche rivers, there are fine settlements; the soil in general is light and sandy, but under proper tillage, produces good crops. At the sources of these streams there are large peat bogs and 'carriboo plains,' where the soil is unfit for cultivation.

RICHIBUCTO.—The sandstones and shales of the coal field are seen along the shore and upon the road between Buctouche and Richibucto, and also along the streams emptying into the Gulf in this quarter. The sandstone in general is a fine grey rock, composed chiefly of silicious particles, feldspar and mica, cemented by the peroxide of iron and argillaceous matter. The strata near the surface, or where they have been exposed to the weather, frost, &c., are much fractured and split into thin lamina: their dip is very variable, and will seldom exceed 10°. Both the courses and inclination of the beds are such as might be expected where displacement subsequent to accumulation has not yet taken place.

A peculiar kind of stratification may sometimes be seen on the banks of rivers: it arises from the different degrees of inclination of strata evidently of the same age and produced by the same causes.

It would appear, in these instances, that the lower strata had been depressed, and afterwards, the more horizontal beds were laid upon them unconformably.

At many places, the rocks will afford excellent freestones, grindstones and whetstones; but no quarries have yet been opened, and the properties of the sandstones remain untouched.

Reposing directly upon these strata, there is frequently a thin deposit of new red sandstone, with strata varying from ten feet to a few inches in thickness. These beds consist of a light red sandstone, and thin strata of arenaceous and marly clay; above them, and where they are absent, there are deposits of detrital sand, clay and pebbles, derived from the rocks beneath. In these there is a perfect degree of stratification, one of the most certain evidences of their having been formed by the agency of water. Immediately beneath, the subsoil beds of red and yellow clay occur from one to four feet in thickness. Both the soil and subsoil are of a reddish color, having been produced by the mixture of the red rock with those of the darker coloured sandstones beneath. Taken altogether, the mixed soils are light, sandy and productive. The whole district under consideration is well adapted to agriculture, and affords an ample illustration

of the capabilities of the Province, both in regard to husbandry and mining.

The alluvial deposits skirting the rivers are greatly modified in their agricultural character, by the forces of currents. The marshes of the Gulf shore, where the currents are feeble are scanty and meagre. Along the shores of the Bay of Fundy, where the tide rises from forty to sixty feet, the alluvium of the marshes from the rapidity of the currents, accumulates quickly; while on the northern shores of New Brunswick, where it does not rise more than six feet, alluvial accessions to the land are but slowly made.—The nature of the rocks over which these currents pass, determines the character of the alluvium; and thus the properties of the marshes derived from the sandstones are less fertile than those from the marly strata of the Bay of Fundy.

RICHIBUCTO.—The Richibucto River, from its mouth to the residence of John Ford, Esquire, a distance of 25 miles, will average a quarter of a mile in length, and is navigable for large vessels twenty miles above the town of Liverpool.—Notwithstanding the lands along the sides of this fine river are of a good quality, they are but thinly inhabited. The harbour is safe and convenient, and large quantities of timber are yearly shipped from it to the Mother Country.—Most of the excellent pine that formerly grew in the vicinity of this stream has been removed, or destroyed by ravaging fires.

The rocks through which the Richibucto passes, from its sources to its mouth, are all sandstones, shales, and conglomerates of the carboniferous series. The strata, in general, are horizontal; and wherever any dip was discovered, it was to the northward. The surface of the earth is occupied by four feet of broken sandstones and erratic blocks: upon these the soil reposes. Excellent freestones may be quarried from the bank of the river. The outside of the strata should be removed before a quarry is opened, as the frost hath shattered the strata to the depth of several feet. All the layers, containing iron pyrites or deep yellow stains, should be rejected, and only the fine-grained compact grey rock should be employed in buildings: this kind will become very hard by being exposed to the sun, and will resist the changes of weather. We ascended the river a few miles above the junction of its branches, the wilderness country southward having been previously examined. The Molus and Bass Rivers, branches flowing in from the westward, also pass over the before mentioned rocks. It had been supposed that a valuable ore was to be found in the bed of the latter stream, but the only mineral seen here was the sulphuret of iron; which, from its brilliant metallic lustre, is calculated to mislead persons unacquainted with the subject. At the termination of the tide flow, the main river sends off a tributary called the south west branch; near the mouth of this stream was the establishment of John Ford, Esquire, who has erected flour and grist mills, and greatly contributed to the settlement of this part of the country. To this gentleman we are indebted for his hospitality and aid in ascending the stream.

COAL.—About three miles above this place, and on the south branch of the stream, coal was discovered about twenty years ago. It also appears farther up the river and at Big Brook, one of its branches. At the former locality it appears in a steep cliff eighty feet high, and forty feet above the level of the stream; it is contained between strata of bituminous shale. Thick strata of coarse grey sandstone meet the shale above and below; the shales, including the coal, being about thirty feet in thickness. The upper part of the cliff and its base along the river, are shaded by a lofty growth of hemlock, spruce and pine. The coal is about two feet in thickness, and of an excellent quality. It is probable that there is another stratum of coal at the base of the cliff, but the debris and rubbish skirting the front of the bold escarpment, rendered our labours to discover the second stratum unsuccessful. The strata dip northwest 10°; this is also the general dip of all the beds in this quarter. The coal appearing farther up the stream and at Big Brook, is evidently continuous from this cliff. From the small degree of inclination in the strata, it is probable that only the most superficial bed of coal has been discovered. By sinking a shaft near the head of the navigation, it is probable that the coal might be found at an inconsiderable depth below the surface; thence it could be shipped down the Richibucto.

Immediately at the base of the steep precipice before mentioned, there is a mineral spring issuing from beneath the coal. This stream sends forth a strong effluvia of sulphureted hydrogen; and its peculiar odor is perceptible to the distance of several hundred yards. Bubbles of gas are constantly rising

to the surface, and from the application of a lighted match some of them took fire and burned for a few moments with a pale blue flame. The water has a nauseous and sulphurous taste, and when taken, even in moderate quantities, it produces purging. It has been found useful in the cure of certain cutaneous diseases, and is still the resort of wild animals. The following is the medium result of several trials made in its analysis—

In one pint	
Carbonic acid—cubic inches	0.7
Sulphureted hydrogen—cubic inches	2.5
Sulph. of soda—grains	3.5
Peroxide of iron—grains	2.0
Silicia—grains	0.5

It is evident that this spring possesses medicinal properties of considerable power, but its secluded situation will render it almost useless, until the country around shall be inhabited.

The casts and remains of plants appear in considerable numbers in the sandstones of the Richibucto. About a mile and a half above the town of Liverpool, on the west side of the river, and on the Indian grant, they are common. These fossils have been mistaken by the inhabitants for petrified pine and maple, and other kinds of recent wood,—but they are all the productions of a much warmer climate than any in North America at the present period, and unlike any of the plants growing in New Brunswick. The strata frequently contain globular masses of sandstone and ironstone as large as cannon balls,—these are sometimes liberated from the rock by the action of the water and frost. They consist of successive layers formed around a central nucleus, and were probably produced by the rolling along of hardened masses over the sand and mud, of which the strata were originally formed.

BOG IRON IRON.—My attention was directed, by the Honble. John W. Weldon, to a deposit of bog iron ore, situated about half a mile westward of the Town of Liverpool. The bog has been partially opened in making a new road, and a small quantity of the ore has been exposed. This variety of iron ore exists in many of the low swampy grounds in this part of the Province, and might be employed in the manufacture of cast iron,—its quantity is constantly increasing from the soil by water flowing over the surface.

It has been already stated that an extensive bar of sand has been thrown up along this coast. At the mouth of the Richibucto, there is a bar across the river about five miles in length. It has been cut through by the current at its main channel, and also by a small passage on the eastern side of the harbour. This bar will average fifty rods in width, and its central portion is attached to a beautiful island covered with red pine. The sand is first thrown up to high water mark by the waves, it is then blown into mounds by the wind, and frequently resembles the outworks of fortifications.

KOUCHIBOUQUAIS.—This is a small river between the Richibucto and Kouchibouguac, which, contrary to the meaning of the Indian name it has received, is smaller than the former stream. The river passes along a channel worn out of the sandstone. Small seams of coal also appear on this stream. The soil is more light and sandy here than it is farther eastward,—it is, nevertheless, capable of being successfully cultivated.

KOUCHIBOUQUAC.—Northward of the before mentioned river, about fifteen miles, is the Kouchibouguac. Like the Richibucto, these streams open into harbours formed by sand bars at their mouths. The surface of the country is more uneven here, than in the neighbourhood of the Richibucto. Excellent freestones and grindstones may be quarried along the sides of these streams. The rock is a compact grey micaceous sandstone, containing in many places, the fossils of the coal field in great abundance. The remains of some of these plants will be seen near the bridge and mills on the main road leading to Miramichi. There are but few good farms in this direction. As lumbering has heretofore been the principal employment of the inhabitants, the capabilities of the soil are scarcely known. The same rocks prevail along the whole shore to Point Escuminac, where a large area of land is scarcely elevated above the level of the sea. It was not deemed necessary to explore these rivers to their sources, as the country through which they pass is composed altogether of rocks belonging to the same class, and contains only the minerals already noticed.

Coal and iron are the only important minerals in the county of Kent,—these, with the soil, are sufficient to give profitable employment to a large population, independent of timber and the fisheries.

COUNTY OF NORTHUMBERLAND.—Between the before mentioned rivers and the Miramichi there are several small streams. The largest of these are Bay des Vents, Black-