

...the white precipices of pure marble, enclosed and surrounded by thick woods, and which, closing in upon the rapids, produce most picturesque scenery. Blocks of any size might here be procured, and by a little management floated down the river into the Sound, where any kind of vessels will find excellent anchorage. A little above these limestone precipices, the hills recede from the river and enclose a valley about 2 miles in width, but they are continued without any interruption to just below the second rapid, where they close in again on the stream. Here the rocks are gneiss; and mica slate and gneiss form all the hills around the lower end of Deer Pond. At about the middle of this lake the hill gradually slope down, exposing no cliff; at one point, however, some beds of yellowish sandstone and conglomerate of white quartz pebbles were observed.—Round the upper end of Deer Pond, and thence as far as could be seen, was spread the level country mentioned before; but at the rapids just above the bifurcation of the river, some ledges of light brown gritstone were seen. Both these gritstones, and the sandstones and conglomerate, were the same rocks as those found on the banks of the Grand Pond and the South side of St. George's Bay, belonging to the lower part of the coal formation. Putting these facts together, we get an n. and w. section from the mouth of the Bay of Islands to the head of Grand Pond which exposes the structure of the country in a satisfactory manner. (See section No. 20.)

Concerning the age of the Humber limestone formation, we have only the positive facts that it is newer than the gneiss and mica slate, and older than the Port au Port shale and gritstone. I devoted as much time as I could spare to hunting in it for fossil shells, but not the slightest trace or indication could I find in any part of it, of its containing organic remains. This absence of organic remains, coupled with its crystalline character, would lead one to look on it as a primary limestone, or a portion of the gneiss and mica slate formation. If so it is certainly the highest part of that formation; as it loses its crystalline character in its middle beds becomes thin bedded in its highest portion, and has every appearance of graduating upwards into the Port au Port shale and gritstone.—Concerning the still more interesting question of the relations of the coal formation to the surrounded rocks, it will be seen that I have as yet little or nothing to offer. That it is unconformable to the gneiss and mica slate is certain; as in St. George's Bay and the Grand Pond it runs up to that formation, while in the Bay of Islands the Port au Port shale and gritstone and the Humber limestone intervene before we find any trace of the red sandstone which forms the base of the coal formation. If it be allowed me to offer an opinion, instead of an argument, I am inclined to believe the coal formation the newest stratified rock in the Island, and probably unconformable to all the rest.

As regards the external character of the district now under consideration, I have already spoken of its physical geography, and have only to add a few words on its agricultural capabilities. The coal formation, on account of its alternate beds of marl and sandstone, and its low and undulating surface, is everywhere admirably fitted for cultivation. On the s. side of St. George's Bay, along the sea cliffs, on the banks of the rivers, or wherever the surface is drained and cleared of trees, it is covered with beautiful grass; and the few straggling settlers scattered along that shore exist almost entirely on the produce of their life stock. The aspect of their houses put me in mind of the cottages of small farmers in some parts of England. There is every reason to believe that the same fertility would be characteristic of the country round the n. v. of the Grand Pond. The whole of the district, even the primary hills, is covered with wood of a far finer description than the generality of that on the East side of the Island. Groves of fine birch and juniper are scattered among the fir, and pines are met with here and there in the interior of the country. On the bank of a brook between St. George's Bay and the Grand Pond my Indian guide pointed out several fine ash trees. The Bay of Islands has, I believe, long been celebrated in Newfoundland for its timber; and I can safely assert that the banks of the Humber, as far as I ascended it, did not deteriorate in that respect—every portion of the country being densely covered with fine wood.

I have hitherto mentioned only those large masses of rock which enter into the solid structure of the Island: I have now a few words to add respecting the superficial matters that lie scattered over it in many parts,—forming a thickness of a few feet immediately below the surface of the ground. These loose materials consist principally of sand and coarse gra-

vel, with here and there a patch of clay, and large blocks of rock either mixed up with them or strewn loosely over them. In the neighbourhood of St. John's and the peninsula stretching out to Cape St. Francis, these superficial matters are principally coarse sand, dark grey and brown, having a semi-stratified arrangement, and being frequently at least 10 feet thick. I never could discover, in any part, shells or other relic of the sea. It lies perhaps most abundantly on the sides of the gently sloping grounds, as for instance in the Town of St. John's; but though never found on the very summits of the hills, it spreads over much of the higher grounds, being seen abundantly along the road from Portugal Cove to St. John's, at a height of 400 or 500 feet above the level of the sea. It is everywhere full of angular pieces of slate rocks, many of them of a large size, lying, without any regard to arrangement, imbedded in the mass.—Some rounded blocks of stone occur also; but I do not recollect ever having seen a piece that might not have been derived from the immediate neighbourhood. At Ferryland some beds of white clay are found on the sides of a cliff, which is used by the inhabitants for plastering and white-washing. Large boulders are everywhere to be met with. In Port de Grave, some of a dull red gritstone, apparently part of the Trinity Bay sandstones, rested on the top of the slate hills 400 or 500 feet above the sea. In Come by Chance lay some immense blocks of red sienite, perfectly rounded, probably derived from the hills w. of Random Island. Along the South shores of Avalon, the mass of drifted materials is, I think, less than on the North. On the summits of the Lamelin Islands, however, 200 feet above the sea, were some large angular blocks of grey slate, resting on red porphyry. Between Burgeo Islands and Cape Ray, there is an almost entire absence of either gravel or boulders; or if the latter be present, they are not to be distinguished from weathered blocks of the rock below. In St. George's Bay the gravel resembles that on the East of the Island, but is mixed with much finer and purer sand. Blocks of the primary rocks, too, here occur in abundance; and on the South side of Saint George's Harbour an immense block of gneiss and mica slate was seen: this was about four yards across in each direction, and 5 or 6 feet of it were exposed above the surface of the ground. Its edges were not greatly rounded. In going from St. George's Harbour to the Grand Pond, the banks of the brooks never exposed anything but sand and boulders; and the shores of the Grand Pond were frequently covered with great boulders of granite, gneiss, and similar rocks. (1) The whole of the flat country mentioned as occurring about the n. e. end of Grand Pond and Deer Pond, appears to be covered by a thick bed of loose sand, containing occasionally small quartz pebbles. Small cliffs of this sand, 30 feet high, were often exposed on the banks of the rivers. It is frequently regularly stratified. I concluded at first, that before the Humber had worn a sufficiently deep channel through the hills below Deer Pond, this flat country had been covered by a fresh-water lake in which the sand was deposited. I afterwards, however, found patches of the same sand on the banks of the Humber Sound, 20 or 30 feet above the sea level. I searched several times, but did not discover a single shell of other organic body, in this sand, to shew whether it might be considered a tertiary formation or not. Wherever boulders of granite, however, or other rock, occurred, they always, as far as I observed, rested upon and were never enclosed by this sand. On the North side of St. George's Bay, near Ship Cove, a small valley is almost filled up by clay, mud and sand, with boulders. (See Diagram No. 21.) This mass forms a low crumbling cliff, 20 or 40 feet high; on the sides of which I found abundance of shells, buried sometimes several inches in the clay. They were in different stages of decomposition, some of them crumbling under the touch. The fragments I brought away have been examined by Professor Sturwitz, and he declares them to be common and existing species—one is a pholus, others mya arenosa, buccinum undatum, a tellina, &c. The small cove was entirely occupied by a pebble beach, and no shells visible in it except these old ones 30 feet above high water mark. It is possible, however, that they may have been brought there by birds, and become afterwards covered by the falling clay. I certainly could find no bed of shells in the cliff; and the case is therefore hardly decisive enough to be cited as argument for the recent elevation of the land above the sea. I have never been able, on the shores of Newfoundland, to perceive any of those

(1) A Gentleman in St. George's Harbor assured me he had seen pieces of coal and other rocks brought down by the ice in Crab's River and the other brooks on the South side of St. George's Bay.

level markings in the rocks, or lines and ledges of sand and pebbles, so common in other countries, and indicating ancient sea beaches raised above their former level.—Except, indeed, in St. George's Bay, and between the Islands of Langley and Miquelon, I have seen but few spots where a beach of any kind exists. Stern cliffs, whose depth below the water seems to equal or exceed their height above it, characterize nearly the whole coast. At the head of some of the Bays, however, and in nearly all the small coves and harbours, is found a bank of pebbles; and it frequently happens that a brook which comes foaming down the rocks immediately behind, suddenly disappears, quietly soaking its way out to the sea beneath the bank of pebbles the waves have piled over it. The pebbles beaches at Great and Little Placentia are very singular, but it would lead me into too great a detail to describe them. Suffice it, therefore, to say that Little Placentia stands on an island surrounded by a band of pebbles which connect it with the main land, and that Great Placentia stands on a great square flat of loose pebbles heaped up by the tides at the junction of the two arms of the harbour with the main opening. In Trepassy harbour is another instance of an island joined to the main by a pebble beach, as also of the sea having dammed itself out of part of its former space, which is now occupied by a fresh-water pond. The pebble beaches at the head of Conception Bay are curious. A bank of pebbles runs along the shore from Topsail to Holyrood, a distance of 10 miles; and on the s. e. side of each of the island of Bell Isle, Little Bell Isle, and Kelly's Island a pebble beach stretches out in a triangular form, its apex reaching 300 or 400 yards into the sea.—It appears as if a s. w. current drifted past these islands, deposited a pebble beach in the slack water under the lee of each, and then swept up the remainder of its accumulations on the shore of the mainland beyond. I was much surprised at finding two rounded masses, as large as a man's head of meandrina (a tropical coral) on these beaches; but conclude them to have been part of the ballast of some vessels from Bermuda or the West Indies.

In conclusion, it may be allowed me to point out the course which I would suggest for the prosecution of the survey during the summer of 1840. I should wish to employ the month of May in examining St. Mary's Bay and the remainder of the Bay of Placentia, as well as the Harbours between St. John's and Cape Race. In the month of June it would be desirable to proceed to Trinity and employ the remainder of the summer in continuing the coast survey thence through the Bays of Bonavista and Notre Dame I should hope to be able to reach the Red Indian Lake by the River Exploits, and to ascertain something respecting the probable extent of the coal field whose borders were reached last summer at the n. e. end of the Grand Pond.

Respectfully submitted  
by  
J. B. JUKES.

**Important Discovery in Vaccination.** Mr. Creely, surgeon of Aylesbury, has demonstrated the important fact that *Small Pox* and the *Cow Pox* have the same origin, the latter being *Small Pox* communicated to the Cow. Mr. Creely inoculated Cows with *Small Pox* matter; the vesicle produced in the animal had every appearance of the vaccine pock. To ascertain the point, children were inoculated with matter taken from the cow thus artificially infected; the result was a fine genuine vaccine vesicle. To establish the fact satisfactorily, these children were submitted to *Small Pox* inoculation, and found to be protected from the disease. Twenty-five successive inoculations have now been performed with this new virus, which may truly be named *variolo vaccina*, and it continues to produce the most satisfactory vesicles; the matter has been employed in Bristol with perfect success. The importance of this discovery cannot be too highly appreciated. *Small Pox* often breaks out in countries where *Cow Pox* cannot be procured; now it is only necessary to inoculate a Cow with the *Small Pox*, and this virulent mor-

bid poison, so fatal to human life, will be converted by this useful animal into a mild fluid, capable of protecting all inoculated with it from that dreadful malady the *Small Pox*.

(From the Royal Gazette.)



Published by Authority.

An Act to defray certain charges that have arisen for the support of Aged and Infant Paupers up to the first of February 1840.

[28th February, 1840.]

May it please your Majesty,

We, your Majesty's dutiful and loyal subjects the Commons of Newfoundland, have freely and voluntarily resolved to give and grant to your Majesty a sum of Money to defray certain charges that have arisen for the support of Aged and Infant Paupers, up to the first day of February in the year of our Lord One Thousand Eight Hundred and Forty, and do humbly beseech your Majesty that it may be enacted, and

Be it therefore enacted, by the Governor, Council and Assembly of Newfoundland, in General Assembly convened, that from and out of such monies as shall be and remain in the hands of the Treasurer of this Island, and unappropriated, there shall be granted unto your Majesty, your Heirs and Successors, the sum of Three hundred and fifty three pounds seventeen shillings and seven pence, which said sum shall be drawn under the Warrant or Warrants of His Excellency the Governor, or Person administering the Government for the time being, and applied to the defrayal, up to the first day of February, One thousand eight hundred and forty, of the expenses incurred, by the several Persons whose claims have been laid before the Assembly, and recommended to be discharged by Message of His Excellency the Governor, in supporting Aged and Infant Paupers, and of such other Persons in this Island as may have claims upon the Colony for the aforesaid services up to the date aforesaid, and to the defraying of such other expences, similarly incurred, as shall to His Excellency the Governor appear just.

And be it further enacted, that of the aforesaid sum of three hundred and fifty-three pounds seventeen shillings and seven pence, the sum of two hundred and fifty-three pounds seventeen shillings and seven pence be appropriated to the following persons, whose claims have met the sanction of the Executive, for the services hereinafter mentioned, that is to say—

To Jane Meany, widow, for supporting Mary Cooney, a lunatic, at six pence per day, and Rebecca Ricketts, a child, at four pence per day, for 306 days, and John Coleman, a sick man, for eight weeks, at one shilling per day. Fifteen pounds eleven shillings.

To Elizabeth Breer, for supporting Oliver Cummatord, an orphan child, 306 days at four pence half penny per day. Five pounds fourteen shillings and nine pence.

To Mrs. Frost, for supporting two pauper children 276 days, at eight pence per day. nine pounds four shillings.