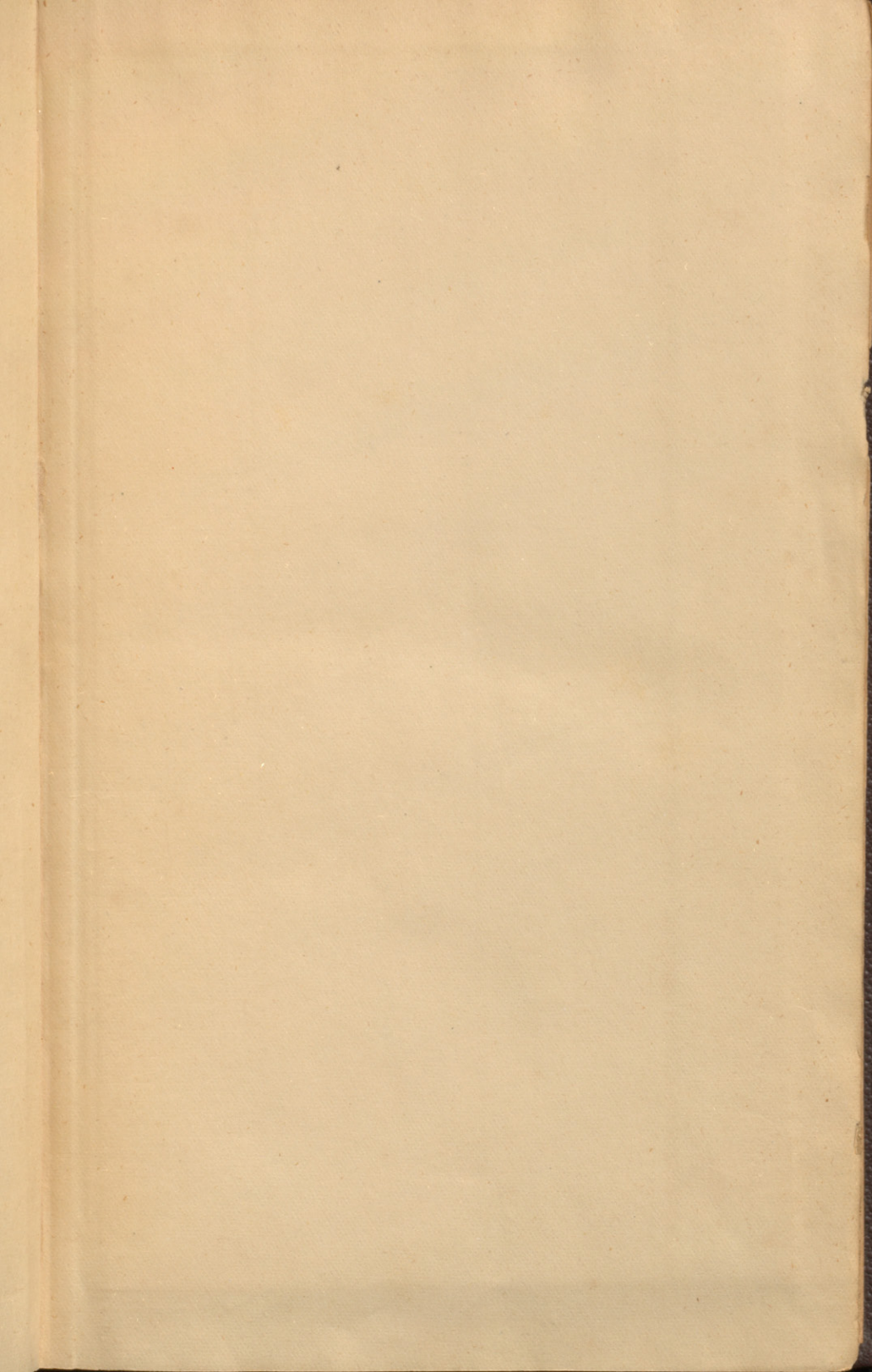
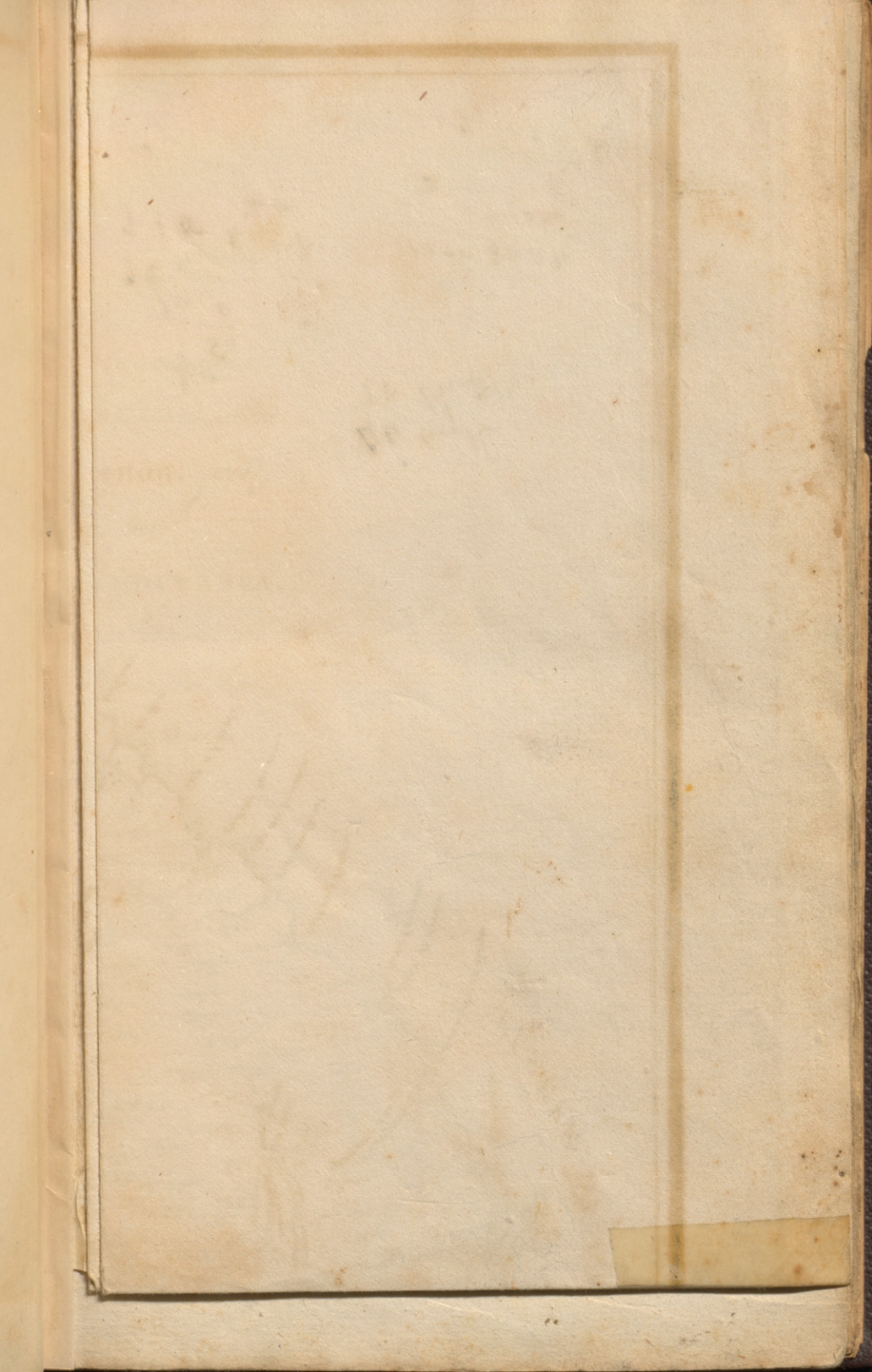
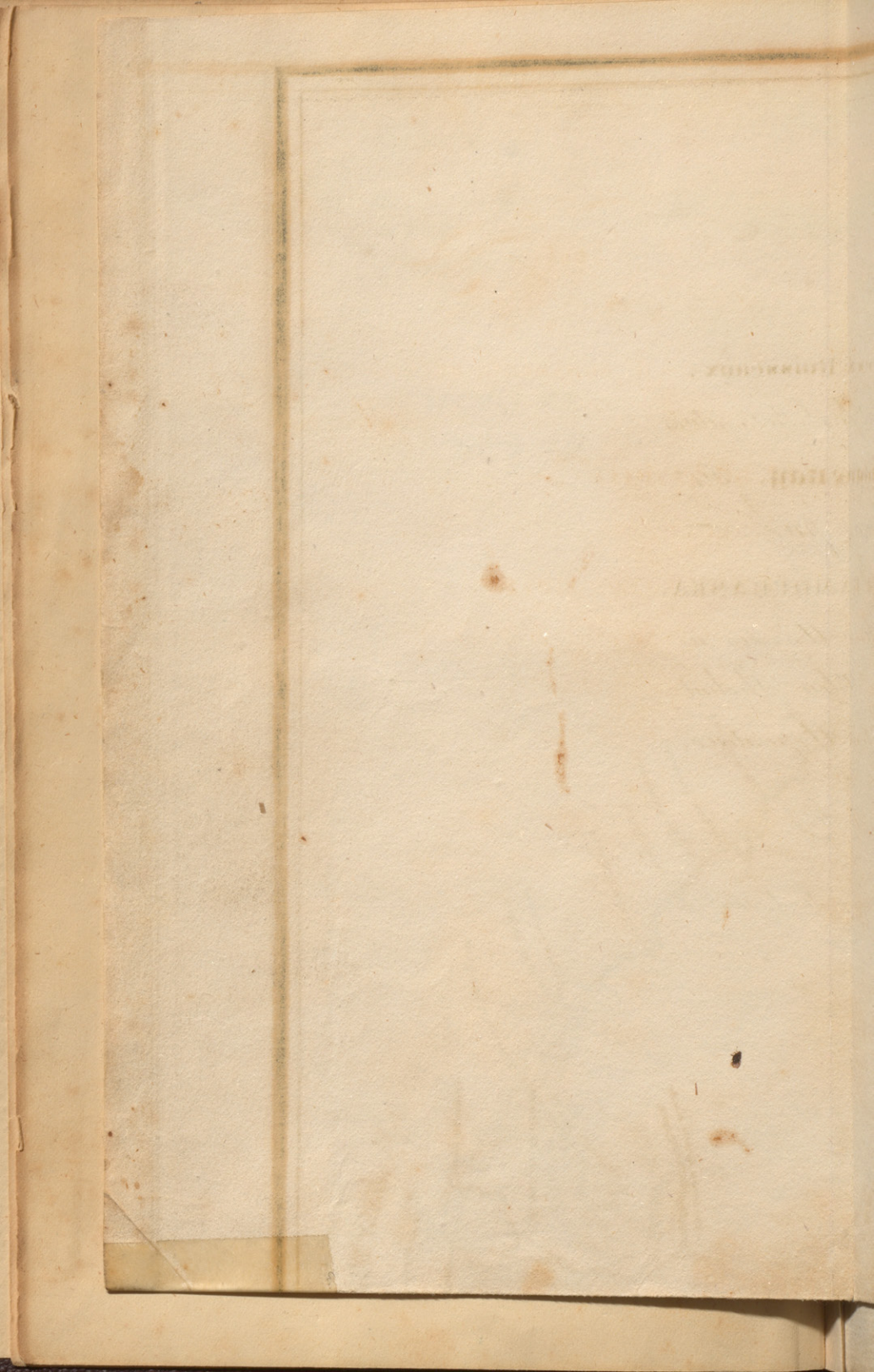


561. Lower Canada.

557







1797

Le 1er jour de l'année 1797

Le 2e jour de l'année 1797

Le 3e jour de l'année 1797

Le 4e jour de l'année 1797

Le 5e jour de l'année 1797

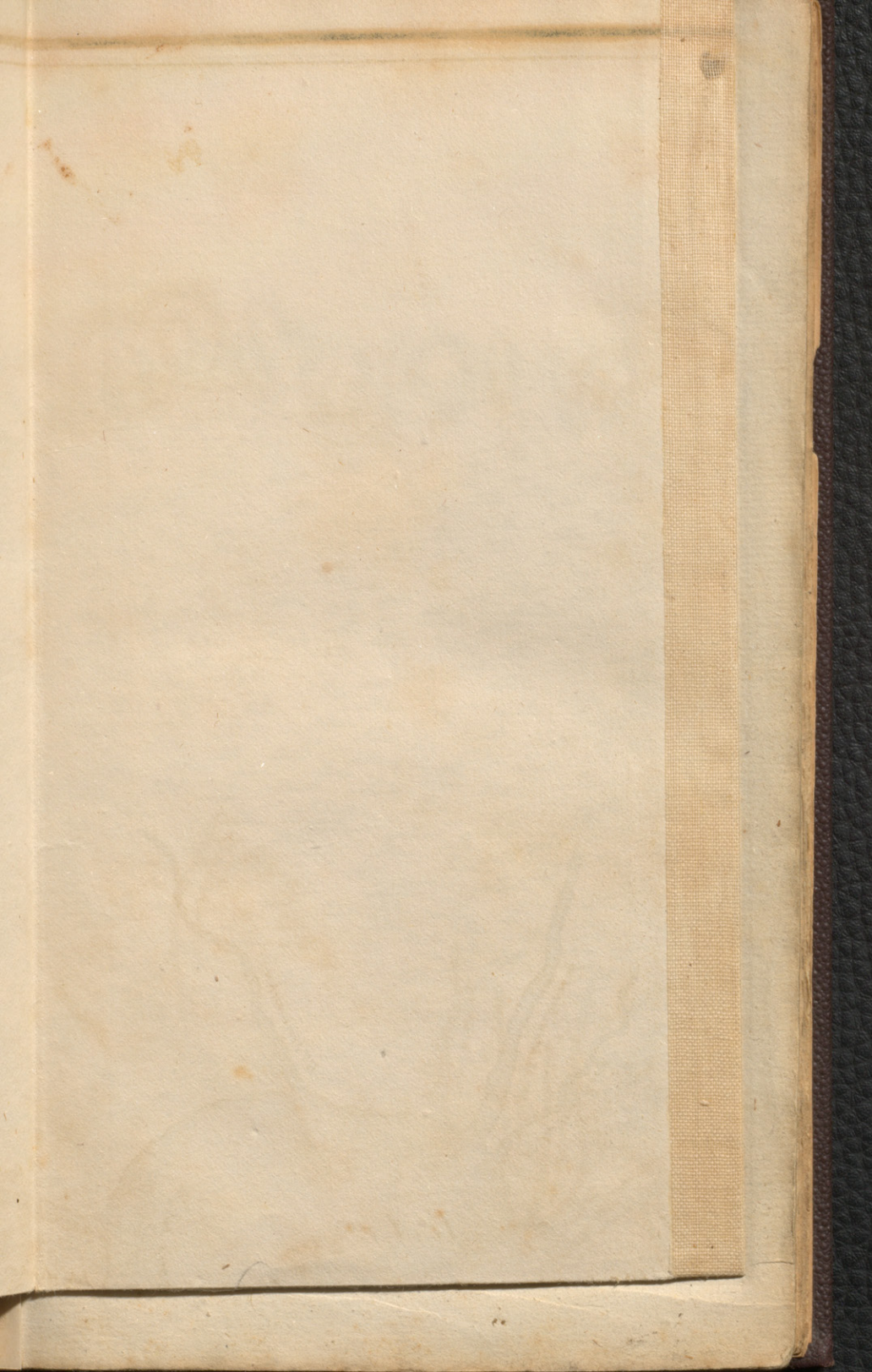
Le 6e jour de l'année 1797

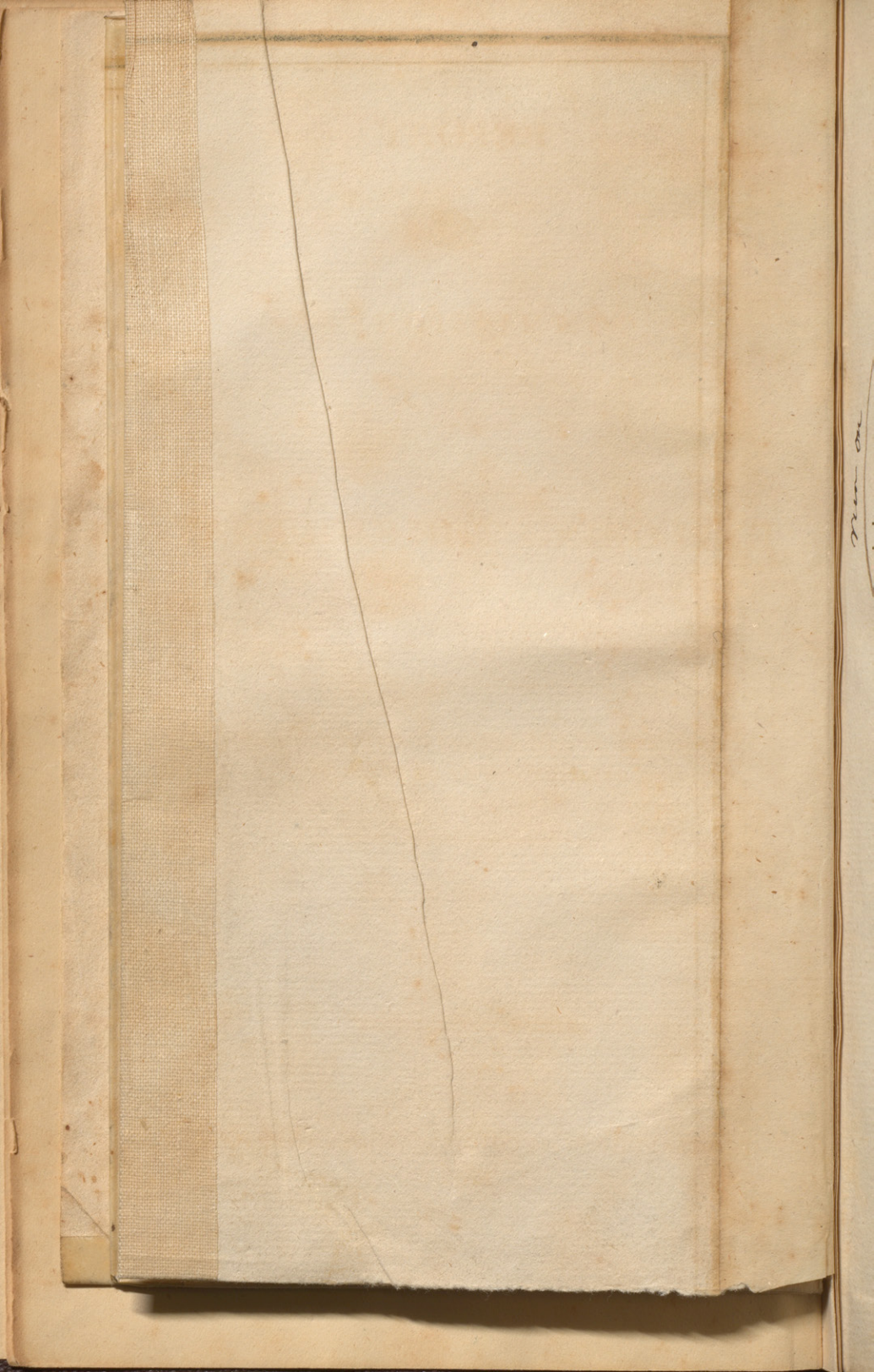
Le 7e jour de l'année 1797

Le 8e jour de l'année 1797

Le 9e jour de l'année 1797

Le 10e jour de l'année 1797





Extracts from the

REPORT

OF THE

COMMISSIONERS

FOR

EXPLORING THE SAGUENAY.

Mem on

ORDERED BY THE ASSEMBLY, THE FOURTEENTH
JANUARY 1829, TO BE PRINTED.

Printed by NEILSON and COWAN, 3, Mountain Street, Quebec.
1829.

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AND

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HEREIN IS TO BE PRINTED

PRINTED BY NEILSON AND CO. 2, TORONTO STREET, TORONTO

1887

REPORT, &c. &c.

To the Honorable the COMMONS of LOWER-CANADA,
in Provincial Parliament assembled :

THE undersigned Commissioners, appointed in pursuance of an Act of the Sixth Year of His present Majesty, chap. 34, intituled an "Act to appropriate a certain sum of money therein mentioned for exploring the tract of country to the north of the River and Gulf of St. Lawrence, commonly called the King's Posts, and the lands adjacent thereto," have the honor, in obedience to the provisions of the same, to lay before the two Houses of the Provincial Legislature the following Report of their Proceedings.

Soon after the appointment of the undersigned as such Commissioners, a plan for the effecting the survey of this tract of country was submitted to His Excellency the Earl of Dalhousie, Governor in Chief of this Province, which received his Excellency's approbation.

In conformity with this plan, three canoes of the requisite dimensions were hired from Mr. Lampson, the Lessee of the King's Posts, at a stated rate per month, and he engaged also to furnish the canoes men and provisions as well for them as for the whole party. This consisted of one of the undersigned Commissioners, of three Surveyors, viz. Joseph Bouchette, Jun., Esq. Deputy Surveyor General, Mr. Hamel and Mr. Proulx, sworn Surveyors, and of the following Gentlemen, who volunteered for the service :—B. P. Wagner, Esq. of Quebec, Mr. Baddeley, of the Royal Engineers. Mr. Nixon and Mr. Goldie of the 66th Regiment, Mr. Bowen and Mr. Davis.

On the 22d July last, Mr. Bouchette, accompanied by Lieutenant Goldie and Mr. Davis, who volunteered to act as his Assistants, proceeded from Quebec to Three Rivers, and in pursuance of the aforesaid plan, and of the instructions given according to it, ascended the River St. Maurice to the mouth of the River La-Tuque, a distance of fifty leagues, entered the river La-Tuque, and ascended it to its sources, and crossing over the head waters of the Batiscan, entered into the waters in their neighbourhood which empty themselves into Lake St. John, at a point about four leagues above the Post of Metabitchuan, the old Jesuit Establishment upon that Lake.

The remainder of the party left Quebec in a schooner on the sixth of August, arrived at Tadoussac on the ninth; the following day ascended the Saguenay with a party of canoe men, and a boat accompanying the two Canoes attached to this portion of the party, and arrived at Chicoutimi on the fourteenth day of August.

Mr. Proulx was here detached with a small canoe and two men, with instructions to explore the lands lying upon Ha-Ha Bay, and between it and Chicoutimi, and having completed this survey he was directed to cross the River Saguenay at Chicoutimi, and penetrate into the interior on the opposite side by the River des Terres Rompues, and ascertain as far as time and circumstances would permit the nature and extent of the cultivable ground, which there was reason to believe existed in that direction, and having done so, to return by the Saguenay to Tadousac, obtaining as much information as he could, and to proceed from the latter place with all convenient diligence to Quebec.

This was performed by Mr. Proulx, and the result of his labours will be found in his Journal and Map which accompany this Report.

Of the two canoes thus left at the disposal of the party, one having on board Mr. Baddeley and Mr. Hamel, left Chicoutimi on the seventeenth day of August, and arriving at Lake St. John on the following twenty-second, immediately turned to the right and commenced, pursuant to instructions, the exploring of that portion of the Lake which lies between the mouth of the Koushpigan and that of the Assuapmousoin.

The second canoe, with a small canoe in attendance, upon arriving at Lake St. John on the 22d day of August, proceeded forthwith to the Post of Metabitchuan in the expectation of there meeting and receiving intelligence of the party which had left Three Rivers on the twenty-third of July.

Upon their arrival at Metabitchuan, however, no intelligence was received of that party, but they were soon relieved from their anxiety upon this score, as they were about leaving the Post of Metabitchuan, by the arrival of the Three Rivers party on the 23rd. of August. These gentlemen had been delayed by the height of waters occasioned by almost continued rains, and had further to encounter the delays incident to passing through a route altogether new and not without its dangers.

Mr. Bouchette was here directed, after surveying the Lake between the mouth of the Koushpigan and the mouth of the Assuapmousoin on the south-western side of Lake St. John, to explore the country lying on the south-west side of Lake Tsinogomi and Tsinogomishish, and upon the waters generally of the communication between Chicoutimi and Lake St. John in that direction, and having arrived at Chicoutimi to proceed from that place to Tadousac by the Saguenay, obtaining such

information as was in his power in descending the river to Tadousac, and to proceed with all convenient diligence from the latter place to Quebec.

The result of the labours of Mr. Bouchette will be seen in the plan accompanying the present Report.

He states that want of provisions and the advanced state of the season prevented him from exploring the country to the south-west of Lake Tsinogomi and Lake Tsinogomishish.

His Journal has not yet been received.

After leaving Metabitchuan on the twenty-fourth of August, that portion of the party which last arrived at Lake St. John from Chicoutimi, rejoined the Canoe having on board Mr. Baddeley and Mr. Hamel at the mouth of the river Koucuatim, which these gentlemen had reached in the progress of their exploring survey, and here Mr. Nixon took the place of Mr. Baddeley in this canoe, and Mr. Hamel was instructed, after completing his survey upon Lake St. John, to explore the Peninsula lying between Lake Tsinogomi and Tsinogomishish on the one side, and the grand outlet to Lake St. John on the other, on his way down to Chicoutimi, and upon arriving at the latter place, to proceed to Tadousac, obtaining any additional information in his power, and to proceed from Tadousac with all convenient diligence to Quebec.

The Plan and Journal of Mr. Hamel accompanies this Report.

The undersigned Commissioners beg leave to lay before your Honorable House, a Plan by Mr. Nixon, containing a delineation of the River Assuapmousoin to its source, as also of the waters connecting the remote Post of Shippeshay with the Saguenay, opposite Chicoutimi the sources of the information from which Mr. Nixon has prepared Plans of these portions of the country hitherto known only to Indian Traders, or to Savages, are entitled to the fullest credit. They beg also to subjoin to the Report, certain extracts from Mr. Nixon's Journal, which have relation to the immediate objects of the Mission.

There remaining no further necessity for the presence of a Commissioner, the gentleman who accompanied the party in this capacity, left them at the mouth of the River Koucuatim, and returned with a light canoe to Tadousac, and thence proceeded to Quebec.

The remaining gentlemen of the party, to wit: Mr. Wagner, Mr. Baddeley, Mr. Goldie and Mr. Bowen, continued their route round the Lake, examining its shores and banks, to the Post of Metabishuan, and thence to Chicoutimi: Mr. Wagner here joined Mr. Proulx's canoe, with a view of continuing the enquiries respecting the quality of the timber, and the facilities or difficulties of its exportation, to which his atten-

tion had been more particularly turned, and of which his long experience enabled him so well to judge.

Mr. Baddeley, Mr. Bowen and Mr. Goldie, having proceeded from Chicoutimi, to St. Paul's Bay, the latter of these gentlemen returned to Quebec.

Mr. Baddeley accompanied by Mr. Bowen, remained at St. Paul's Bay, to continue the mineralogical inquiries to which his attention had in the progress of the expedition been more particularly devoted.

The undersigned Commissioners beg leave to lay before your Honorable House, the highly valuable proofs of his zeal and industry in the Geognostical survey.

For themselves, they beg leave to say that the results of this exploring survey have been more satisfactory than they could have anticipated, and although much yet remains undone, from the smallness of the means at their disposal, yet, that enough appears from the accompanying plans and documents, to demonstrate that this tract of territory could afford habitation and subsistence to vast numbers of men, and thereby add greatly to the military strength of these Provinces, and be conducive to the general interests of the Empire, whereof we have the honor and happiness to form a part.

All which is nevertheless most humbly submitted.

Quebec, 26th December 1828.

(Signed) ANDREW STUART,
DAVID STUART.

GEOGNOSTICAL SECTION

THROUGH A PART OF

THE SAGUENAY COUNTRY;

Including a few Topographical and Agricultural Observations;

(By Lieut. F. H. BADDELEY, Royal Engineers.

THE materials for forming this geognostical essay were procured while attached to an Exploring Party, which left Quebec in the summer of 1828, on a journey through the Saguenay Country, to collect information as to its capabilities for settlement.

Upon a perusal, it will be found to require much indulgence, partly on account of the inexperience and limited information of the writer, on the subject in general, and partly owing to the short period allotted for observation. This indulgence, it is hoped, will be readily granted by the reader, when he is informed, that it has been written without assistance, and by a person, as he will soon ascertain, totally unpractised in bookmaking.

As this is considered by the writer merely as a sort of appendix to the more important and comprehensive reports of Ensign Nixon, 66th Regt., Messrs. Bouchette, Hamel and Davis, he has omitted as superfluous, most of the distances and courses, &c., retaining only the latitudes of those places where he had reason to think his observations were correctly made for determining them, and referring the reader for the relative position of places, to the accompanying plan.

Without further preamble, he will now proceed with the description of the rocks which were met with in the route, in the order they came under observation, trusting that it may afford the experienced geologist the means of fixing their geological position,—an attempt he has seldom presumed to make himself, and where made, it is with the diffidence and hesitation compatible with his want of experience and knowledge on the subject.

The rocks on the Island of Orleans, wherever we have seen them, are composed of alternating strata of clay slate and grey wacke. At Patrick's Hole, which was reached about 10 A. M. of the 6th of August, these rocks appear alternating with each other, in very distinct strata, the dip of which, when not vertical, is either to the east or west, at an angle of from 60° . to 85° . Here the grey wacke predominates, and rising beyond the thin strata of clay slate, owing to the greater resistance the former opposes to the action of weathering, forms on the shore natural low stone walls, parallel to each other. It is probable that a good building material may be procured at this place.

As the term wacke has been applied very loosely to rocks of very different characters, we will here describe the mineral contents, &c. of the one to which we have applied this name:—

Its prevailing colour in the neighbourhood of Quebec, of which it is a characteristic rock, is greenish grey. It possesses a mechanical and granular structure, being composed of rounded grains of quartz, thickly distributed through a base of indurated clay; these are sometimes large enough to render the term pudding stone applicable to it. Small white crystals of felspar and small angular pieces of clay slate are occasionally seen in it. It is almost always characterised by a great degree of solidity and infriability, and could never be mistaken for one of the latest sandstones. The grey wacke of Cape Rouge is an excellent building stone, and has been much employed in the scarps of the new fortifications at Quebec. Although the predominating rock, grey wacke, is comparatively rare among the *debris* or shingle, on the shore, owing to its power of resisting the disintegrating action of the atmosphere, while clay slate, for a contrary reason, covers the shore in angular fragments.

These two rocks continue without interruption, as far to the westward as the Telegraph, from the neighbourhood of which Messrs. Nixon and Bowen brought specimens of the latter, much discolored by the red oxide of iron, and containing small rounded nuclei or nests of magnetic iron. These gentlemen report the soil over which they passed, to be sandy and much neglected, a description that will apply to most of that we saw on this island. A few yards beyond high water mark, the rocks suddenly emerge, and form a bank about fifty feet high, running parallel to the river. Having walked about a mile to the eastward of Patrick's Hole, along the shore, no important geological change was observed.

At river La Fleur, off which, adverse winds obliged us to anchor, the same rocks were observed; we here learnt, however, that limestone is found in the adjoining parishes of St. François, to the eastward, and St. Laurent to the westward, at the latter of which places lime is burnt for the supply of the island. We here made a small excursion inland, for about two miles, on a N. W. course, without observing any thing

more remarkable than an isolated ridge of grey wacke, suddenly cropping out and dipping to the S. E.* at an angle of from 50° to 60° . Upon our return, we took the Sun's Meridian Altitude, and found the latitude to be $46^{\circ} 53' 40''$.

Leaving river La Fleur, we came to anchor again off La Grosse Isle, on which we passed the night. This island we were informed belongs to the Ursulines, and is about three quarters of a league long, by about 550 feet wide, but being almost entirely a bare rock, one farm only, of about 90 acres, is under culture upon it. Having reached this place very late at night, and quitting it very early in the morning, our geognostical observations were necessarily very scanty. The rock we believe is grey wacke. It is covered with a grey lichen, and bears the appearance externally of a solidity it does not possess, at least in the places examined, as it readily broke under the hammer, into tabular pieces, with oxidated surfaces. The obscurity of the weather and time at the period of observation, together with the absence of the specimens collected, which were left behind, will not allow us to describe with confidence. The outline of the island is craggy and irregular.

Passing to the southward of the island, in descending the St. Lawrence, several islands, viz: Marguerite, Cochon, &c. &c., some of them mere isolated rocks, were observed on the left hand, and which have the appearance of being also of grey wacke.

We lay off the mouth of the Saguenay on the morning of the 9th of August, at a conjectured distance of from 9 to 12 miles. The highest point of land on the western side of the entrance into the Saguenay at this distance, subtended an angle of $1^{\circ} 12' 44''$. No approximate height could be expected from calculating with such imperfect data; they were employed, however, and by one calculation, in which 12 miles was assumed as the base, the height was found to be 919 feet; by another, in which the base was $10\frac{1}{2}$ miles, 805 feet were obtained: the former agrees nearly with the result of an observation less liable to prove erroneous which was taken subsequently at the post of Tadousac.

Upon landing at this place (Tadousac) we proceeded immediately to examine a few of the geognostical characters of the country. The only place of residence here is erected on a bank of sandy alluvium, elevated about 50 feet above the river, and forming a flat terrace at the base of the mountain which suddenly emerges at a short distance behind. The rock of which these mountains are composed is granite, either of a red or a grey color, depending upon that of the felspar. It contains very little mica, but sufficient to make it a genuine granite, a rock as will be

* This is the prevailing dip on the northern shore of the St. Lawrence; it is frequently reversed on the southern.

seen of rare occurrence among those about to be described. It crops but in cuboidal masses, and possesses sometimes the probably fallacious appearance of being stratified. At the foot of this granite, a small stream drains a tolerably deep section of the before mentioned alluvium, which is crowded with water-washed fragments of primary rocks. On the shore were seen small deposits of magnetic iron. Here bases were measured, and the requisite angles taken for determining the height of the most elevated land on either side the mouth of the Saguenay, which was found to be 912 feet on the western side, and 588 feet on that to the eastward. These results are approximations only, as the observations from whence they are derived, were not taken with the utmost precision.

Leaving the harbor of Tadousac and proceeding to the eastward round the clayey precipice of Pointe-aux-Vaches, which is the most southern portion of the alluvial plateau before described, we reached a small bay, at the bottom of which the Moulin Baude rivulet enters the St. Lawrence, at the distance of about three miles from the Post. It is here that the bed of white marble is situated, which has already excited much attention. We visited this place late in the evening, and could only spare ten minutes to its examination. It lays in close contact with sienitic gneiss, a rock composed of white felspar, gray quartz and black hornblende; the latter of which minerals it is, that by its arrangement in parallel seams and layers, makes the term gneiss more applicable to it than granite; these seams and layers indeed are sometimes so thick, and always so continuous, as to merit the name of alternating "hornblende schists" of Maculloch, if an aggregate, in other places of the neighbourhood, of so intrusive a character, and on that account agreeing better with one of his "overlying" rocks, can be admitted among that class. The fracture of the rock is effected more readily in the direction of these seams than elsewhere, and the surface thus exposed has a black pseudo-metallic brilliancy, resembling some micaceous schists, for which at the first sight it might be mistaken, but the easy fusibility before the blow-pipe, into a black shining globule, of that mineral which sometimes resembles black mica, is a sufficient distinction.

But to return to the marble: At its junction with the gneiss, it is much entangled with it, and it is stained in many places of a greenish color. Conformable to the accompanying strata it dips to the S. W. at a high angle, and crops out in yellowish white water-washed masses on the shore, at the bottom of a precipitous cliff, where alone we saw it. None of the specimens examined could be considered of excellent quality, as they were much stained and bastardised by what was supposed to be either hornblende or epidote; besides they are of a laminar, and not of that granular, structure which bestows on the white Italian marbles their greatest value, by causing them to work freely in any direction. We had no leisure to ascertain the quantity in which this marble occurs, but this deficiency of information is fully supplied by the following anonymous communication, which there is reason to think generally correct:—

“TADOUSAC, Sept. 14, 1826.

“ We walked this morning along the beach to Moulin Baude, about four miles below this Post, to see the bed of marble there. Pointe Rouge, forming the south-east promontory of the harbour of Tadousac, is chiefly composed of a very hard-grained red granite. The granite alternates for a few paces with, and is then followed as far as Pointe-aux-Vaches, by several varieties of primitive rocks, principally gneiss, &c. until they are there met by a bed of clay, apparently one hundred and fifty feet thick above the level of the river, and cut down nearly perpendicularly by the beating of the waters for a distance of about two hundred yards, which is the whole breadth of the bed. This clay is of the same character as that at Pointe-aux-Bouleaux. (*) The primitive rocks of the same description which were found laying against the clay, almost immediately succeed it, and the action of the water discloses to the passenger that fantastic and beautiful intermixture of layers of different colours, so common between Malbay and the Saguenay. The shore is then indented, and a bed of gneiss, stretching out into the St. Lawrence, has been cut off by the water and forms a little island; opposite to it is a bay, and in the dry sand thrown up, the wild oats grow so profusely that they almost appear to be sown by man. A larger bay a little farther on is what is called Moulin Baude; it is about one hundred and fifty or two hundred yards deep; and at its bottom is the bed of marble. This bed is nearly vertical, rising within view to the top of the bank, which is here scantily wooded and about one hundred and fifty feet high, ascending at an angle of about 70° . The direction of the bed is nearly N. (NW ?); the breadth along its whole exposure varies from six to eight or nine feet, disappearing under ground without diminution. In some parts it is interlaced by the adjacent strata, (gneiss), but it is generally pure and solid. A small stream falling down the bank has intersected it, and disengaged a large block or two which have been exposed to the water and frost; they do not appear to have been much affected by this exposure; indeed they have resisted it exceedingly well. Supplies of many thousand tons might be obtained at a trifling expense. As a pure white marble it will be very valuable, for it is generally speaking of a pure white colour, although to the depth of a few inches from the adjacent strata it is often tinged green, and in a few parts of the mass

(*) “ The clay at Pointe aux Bouleaux and Pointe aux Vaches, the two outermost tongues of the banks of the Saguenay at its mouth, occurs in immense beds, of which that at the first place is about thirty or forty feet in thickness above ground, and that at the last place probably two hundred feet; both together extending in superficies apparently ten or twelve miles. It is extremely fine in its texture, contains a good deal of lime and some iron. It has the property of crumbling when water is thrown upon it, as unslaked lime does, and might by being merely spread out and exposed to the falls of rain, answer as an excellent manure for a soil having an excess of acid, such as that of swamps, &c.”

Samuel Neilson, Esq.

there is a red tinge (+). This muddy bay is dry at low water, affords a protected harbour, and admits at high water vessels drawing six or eight feet. A vessel of the former draught might indeed touch the bed itself with its keel. The entrance from the St. Lawrence is not difficult. It is not more than forty-eight hours' sail from Quebec with a light fair wind. Large sound blocks of the marble of fifteen or twenty feet in length by four or five feet wide, might I think be obtained: these would be fine ornaments as columns, &c. to buildings. As the marble does not take a fine polish, it would not be so much in request for chimney-pieces, &c. It well deserves to be worked. The discovery of marble at this place is not a very new one. Charlevoix, who anchored here in 1720, in the Chameau, a French King's-ship, landed at the small stream at the bottom of the bay, and it is probably in allusion to this very bed, which he could not have failed to see, that he says, in speaking of the place, 'tout ce pays est plein de marble.' (‡) The marble in question was long ago known to the North West Company."

It is a curious fact, that this marble was bought for gypsum; the purchaser, as we are informed, on the most respectable authority, ground it up for cement, and found it to answer very well. If so, he must first have expelled its carbonic acid by means of a powerful heat, for there is no doubt whatever of its being a very pure carbonate of lime, and its association with granite and gneiss places it among the primary marbles. That gypsum has ever been found among primary rocks, so as to indicate its primary origin, is doubted by some geologists. It bears a strong resemblance to alabaster, and probably on that account was mistaken for gypsum.

On the subject of this mistake the following extract of a letter, addressed by us to the Editor of the Quebec Mercury, is given;—

"Two kinds of alabaster only are known,—that formed on the floors of caverns by calcareous depositions from the roof, called stalagmites, and some varieties of gypsum or sulphate of lime. The former it cannot be, and one of the latter it is not for the following reasons:—All the varieties of gypsum except the anhydrous may be scratched by the nail, which this cannot be. None of them effervesce in acid, which this not only does but forms a clear solution in. The gypsums fall to powder with heat—the mineral in question burns to lime. It is therefore a carbonate and not a sulphate of lime.

(+) As a statuary marble it is totally unfit; whiteness alone is not sufficient; it should also possess granular structure. Those marbles are best for that purpose which, like the Carrara marble, resemble the finest white sugar.

(‡) A remarkable instance of exaggeration if he alluded only to the bed in question; but it is probable that, deceived by the whitened surfaces of almost all the rocks in this place, he mistook that for marble which was only the rock it was associated with.

“The translucency of this marble is remarkable, which joined to its colour (in favourable specimens a dazzling white, sometimes slightly shaded with pink) renders it to all external appearance well calculated for ornamental purposes, particularly for the manufacture of vases, lamps, &c.. If its abundance will allow of its being employed as a building stone, the ease with which it may be worked, its solidity and whiteness, would render it at once an economical, a durable and a handsome building material. Some have indulged the hope that it might be made an article of export; but admitting that it is in sufficient abundance, which we doubt, white marbles of a far superior character are found in many parts of Scotland, a full account of which may be found in some papers communicated by Dr. Macculloch to the Geological Society of London, and entered in the 2nd and 3rd Vols. of its Transactions. We here insert an extract from one of these papers which will be found to afford some interesting information respecting the Grecian, Italian and Scottish marbles.

“Few substances in the catalogue of those with which economical mineralogy is concerned, have excited more interest than statuary marble, from its rarity, its beauty and its indispensable necessity in the art of sculpture. It has at different times formed an object of anxious research in this country, and premiums have been held out for it by the Society of Arts. It has consequently been found in various parts of Scotland, as well as in Ireland, but no native specimens have yet been introduced into the arts. As the causes which have impeded their introduction have hitherto been such as may be considered adventitious, being of a commercial nature, and not founded on any experience of their physical defects, it has been hoped that they might by perseverance and time be removed, and that the statuary marbles of this country might at some future day supersede the necessity of importing this article. It will not therefore be a misplaced enquiry to examine the several properties of those marbles which have at different times held a place in the estimation of artists, and to compare them with our own specimens, more particularly with that of Sky, now under review, the most abundant and certainly the most specious of all those which have yet been found in Britain. The enquiry is the more necessary, as the several circumstances in which white marbles differ, do not appear to have been generally attended to, and as an undue value seems in some instances to have been fixed on our own in popular estimation, although not in that of sculptors themselves.

“The value of this substance in those distant periods when the arts of Greece flourished, occasioned an industrious research after a material in which the sublime ideas of its artists could be embodied. . . . Accordingly many quarries have been wrought in ancient times, of which little has descended to us but the names, and a few of the works which were executed from their produce. These marbles were of various qualities, and examples of them are still to be seen in ancient statues, al-

though with regard to many of them a species of evidence often little better than conjectural, has guided sculptors and mineralogists in their attempts to determine the quarries from whence they were derived. Among these, the quarries of Paros afforded a marble, (the often quoted *lychnites* of Pliny) in which it is asserted that the celebrated *Venus* was wrought, as well as some others to which we have not access. But there are many specimens of sculpture in the British Museum which seem to have been executed in this stone, or in one at least of analogous character.

“Of the nature of the Parian Marble we are enabled to speak positively, since some blocks of it have been quarried during the last few years, and are now to be found in the shops of the sculptors of this city. The grain of this marble is large and glistening, while at the same time its texture is loose and soft, and its colour of a yellowish and watery white. It possesses considerable translucency on the edges, a quality which, however desirable in statuary marble when of a fine grain, from the softness which it gives to the outline, only increases the disagreeable aspect of the Parian by the angular reflections of light which takes place on the pellucid edge and surface from the innumerable faces of the small plates. It is certain indeed that the Greek sculptors abandoned the marble of Paros after the quarries of Luna and Cararara were discovered, the superior fineness and whiteness of these marbles, which at present cause them to excel any with the places of which we are now acquainted, rendering them also at least equal to the best of those ancient ones of which the native places are now unknown.

“Independently of the injurious effects which the large grain of Parian marble produces on the transparent surface of sculptured works, and the false lights which it thus introduces into the contour, it interferes materially with the requisite correctness of drawing in the lesser works, and is thus inapplicable to the details of small sculptures in relief. It is, nevertheless, susceptible of a good polish, a quality, however, of little value in the eyes of the statuary, and one which in this variety only serves to render the defects of its texture more apparent. - - - - - It is also said to have been deficient in size, since it was so intersected by fissures as to be incapable of yielding blocks of more than five feet in length. I may add that, in the present state of the public habits with regard to white marbles, there is no demand for modern works executed in Parian marble. Its celebrity is consigned to the metaphors of poets.

“The quarries of Luna produce a compact white marble, susceptible of a high polish, and capable of being wrought with the most minute accuracy. Hence it is preferable for the finer operations of bas-relief either to the Parian, of which the aspect interferes with the delicacy of finish and of surface required in these works, or to the Pentelic, which was subject to accidents from veins of mica and of serpea-

tine; or to that of Carrara, in which dark veins are of frequent occurrence. It was accordingly preferred by the ancients, and among many other works, the Apollo (Belvidere) is said to have been executed in Luna marble. We have no other knowledge of the marbles of Hymettus and of Arabia than their names.

“Of all the marbles employed in the works of the ancients, and of which many specimens have descended to our days, that of Carrara is almost the only one which is at present held in estimation, or is now accessible to modern sculptors. This marble is of a very fine grain and compact texture; it is also susceptible of a high polish when required, and is consequently applicable to every species of sculpture, except when, as is too often the case, dark veins intrude and spoil the beauty of the work. Notwithstanding the general apparent uniformity of its texture, it offers different varieties of aspect. It is always of a fine granular fracture, yet this fracture is sometimes combined with a slight tendency to the flat splintery, in which case the stone is harder and more translucent than when it is purely granular. When merely granular, it is sometimes dry and crumbly, precisely as if it had been exposed to a high heat; it then loses much of its transparency, and is called woolly by sculptors. Its transparency is various, and in some cases nearly equal to that of alabaster, (granular gypsum.)

“The last of the ancient marbles which I shall describe, is that of Pentelicus of which the quarries are probably still to be found in the vicinity of Athens, although they have not been investigated by modern travellers. This marble is of a loose texture, and moderate sized grain, coarser than that of Carrara but finer than that of Paros; in colour it is exceedingly imperfect, being tinged with grey, brown and yellow, and mottled with transparent parts, which give it the appearance of having been stained with oil. But its most formidable defect is its laminated structure, and the quantity of mica with which it is contaminated; to this we are to attribute the corrosion and almost entire ruin of so many of the specimens, the action of the weather desolving those parts of the stone where the mica is most abundant, and cutting deep fissures through many parts of the work. It is peculiarly unfortunate, that the two most admirable specimens which are calculated to excite in the minds of artists a mixed feeling of wonder and despair, the horse's head, and the Theseus, should be those which have suffered most. Had they been fortunately executed in the more uniform and durable stone of Carrara, these works might still have been preserved to us in all their original perfection of drawing and surface. Even the hammer of the Turk would have rebounded with little injury from the marbles of this texture, while the micaceous stone of Pentelicus, splitting in the direction of its laminae, has permitted the complete mutilation of many valuable sculptures.

“We have no geological information with regard to the relation of

these stones. The great resemblance of the Pentelic to that of Glen Tilt, in aspect and composition, renders it probable, that like this, it lies in mica slate, forming beds parallel to, and interstratified with, that rock : that the others have similar relations to the primary rocks, we should have concluded on general geological principles, had we not already seen that the white marble of Sky, which has given rise to this discussion, belongs to the secondary strata.

“ We have now to examine the white marbles which have been discovered in our own islands, for the purpose of comparing their relative properties, and the value which they are likely to possess in sculpture. I am unfortunately unable to give any account of those found in Ireland, neither having seen their places, nor being possessed of any specimens.

“ That which has been found at Cape Wrath, in Scotland, is of a grain much larger than even the Parian, and is consequently useless for the purpose of sculpture ; and this indeed is by much the most common character of the Scottish specimens. Those of Blairgowrie, of Glenavon and of Balahulish, are all equally characterized by this large sparry texture, and are all equally unfit for sculpture, however applicable to the purposes of architecture. The marble of Iona has been long since exhausted, and consequently requires no particular notice : however, valuable from the purity of its colour and compactness of its texture, yet the uncertainty of its splintery fracture before the chisel, (that tool without which no spirited work was ever finished) combined with its great hardness, would probably have rendered it useless in the arts even if it were still to be procured.

“ In a paper on Assynt, I have already described the white marble of that district ; it is of a very close texture, and although it contains no earth but lime, is of unusual specific gravity and hardness. It is incapable of being polished, a circumstance, it is true, of no consequence in Statuary, since the polish only gives a false light to the surface, and is not admitted of in modern sculpture ; but it labours under the concomitant disadvantage of want of transparency, producing nearly the same dead effect and dry outline as is seen in a plaster cast, a fault in itself sufficient to prevent it from even being adopted as a good material in the arts : its extreme hardness also renders it very expensive to work.

“ The marble of Sky, the more immediate object of this discussion, is of a pure white colour, and appears sufficiently extensive and continuous to be capable of yielding large blocks. The purity of its colour is seldom contaminated, its fracture is granular and splintery, and its texture fine, less fine than that of Iona, but more so than that of Assynt ; its compactness, hardness and gravity are greater than those of the marble of Carrara, which it in fact resembles in little else than colour. It is apparently well fitted for all the purposes of sculpture, as it can be wrought in any direction, and has sufficient transparen-

cy, while at the same time it assumes even a better polish than is required for statuary. With these good qualities, however, is combined an uncertainty arising from its unequal hardness. While some parts of the stone are nearly as easy to work as that of Carrara, many other specimens turn out so hard as to add a charge of near 50 per cent to the cost of working : this appears to arise from the influence of the syenitic and trap veins which traverse it, as I have before mentioned, but which, however, produce no change in its chemical composition, nor any other effect than that of induration. This addition of price to the current charge of working is sufficient in the harder specimens to counterbalance in a great degree the superior cheapness of the material, and the advantages derived from lower freight, duty and insurance. Such are the difficulties which oppose the introduction of the most perfect marble which has yet been found in Britain, difficulties which, slight as they are, ought, together with the prevalence of established habits, and of a commercial nature, to check the extravagant hopes which have been entertained in this country, of superseding by its own produce, the importation of foreign statuary marble. But it will not be rendering justice to the marble of Sky if I do not add, that it possesses a property not found in that of Carrara, and one of considerable importance, at least in small sculptures. This is, that compactness of texture by which it resists the bruise which so often takes place in marble, at the point where the chisel stops, an effect known to sculptors, by the technical term *stunning*, and of which the result is a disagreeable opaque white mark, generally in the very place where the deepest shade is wanted."

It is hoped that the foregoing digression will be excused, as it affords information not generally before the public, by which the means of estimating the white marbles of Canada are readily obtained ; as well those whose localities are already ascertained as others that will eventually be so.

The rocks on both sides of the Saguenay, as high up as La Buole, (a mountain which stretches out into the river from the north eastern side, in a remarkable manner) are probably granitic, and form a continuation of the same series met with in the more immediate neighbourhood of Tadousac. They have sometimes the appearance of being stratified and of dipping to the S. E. at an angle which is nearly vertical. These rocks rise with almost perpendicular scarps to a considerable height, and their summits are barren, and in some places totally bare, in which latter case, the whitened surface of the rock, owing to the incipient decomposition of its felspar, resembles that of some limestones ; they are often also of a smoked or blackened appearance : nearly à *fleur d'eau*, a red ferruginous baud characterises these rocks. Their outline is rounded and mamillary, a character they lose as the river is ascended.

It was in the La Boule that we observed for the first time those singular masses of trap, sometimes under the form of veins or dykes, sometimes under the form of interfering and unconformable beds or strata, but most frequently as isolated patches both rounded and angular, the whole so deserving the attention of the geologist. As these trap appearances are characteristic of almost all the rocks we saw, it is necessary to describe the mineral contents of that aggregate to which we have applied this term, particularly as without such a description it is almost unintelligible, owing to the loose and indefinite manner in which it has been used. This term, wherever it may appear in this essay, is meant to imply any rock in which hornblende predominates, without any regard or reference to those theoretical notions which it has been often used to convey. It here more particularly means an aggregate composed of black crystalline hornblende, small grey crystals (or rather scales composed of an assemblage of crystals) of felspar and a little unelastic mica or talc: in short, a substance similar to what has been before described as associated with the white marble at Moulin Baude, but essentially differing from it in the manner in which it occurs. It much resembles also a compound that is found on the Montreal Mountain, to which a volcanic origin has been ascribed. The granite with the trap here associated was of a greyish color. In it we in one place observed nodules of magnetic iron, exhibiting a very iridescent surface resembling some ores of copper, for one of which it was at first mistaken. This ore is very strongly magnetic, apparently as much so as malleable iron. Contrary to the hornblendic compound in the gneiss at Moulin Baude, it is not easy to procure a fragment of this trap shewing the two rocks in contact, as upon being struck they separate immediately and it is then perceived that the trap has externally that smooth even surface which a mould bestows on the substance cast in it, shewing generally no appearance of entanglement or conglomeration at the places of contact. On the weathered surface of the trap the felspar is often brown and prominent. This trap is often very magnetic.

The granite of La Boule, for such we call the rock though apparently stratified, is composed of grey quartz, reddish felspar and small points of brown mica. A little above the line of junction of the river and the rock and on its south-eastern side, a thick dyke of trap traverses it nearly horizontally and at right angles to the stratification. It appears to rise out of the water at the western extremity of La Boule, and, with a slight inclination, ascends towards the eastern.

We will now describe more particularly the appearances of these dykes, veins, &c.: they rise at all angles through the accompanying strata; they are frequently parallel to each other, and even to the planes of stratification; they generally either terminate suddenly in the rock at one or both extremities; in the latter case they answer the description of contemporaneous veins; these extremities are either pointed or forked.

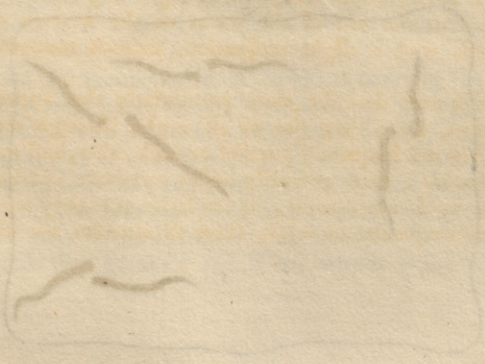
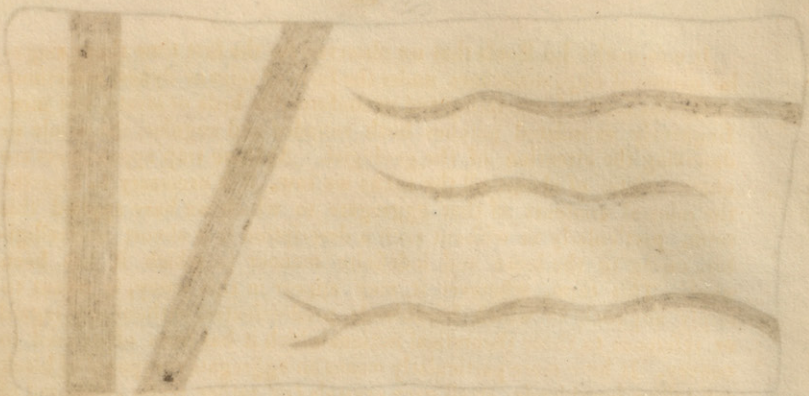


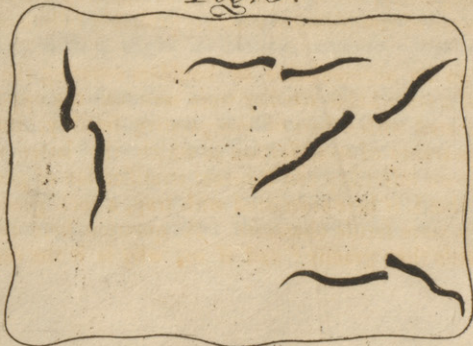
Fig: 1.



Fig: 2.



Fig: 3.



The accompanying plate, (fig. 1,) will afford a better idea of what it is intended to describe.

Isolated quarter moonshaped pieces and patches, varying from the size of the hand to that of the body are more common. (see plate, fig. 2.)

It is worthy of observation that the small quarter-crescent shaped pieces occur together by twos and threes in a parallel order, and that the trap, of whatever shape, generally has angular corners, and terminations. Channels and hollows are sometimes seen in the face of the rock, which are owing to the removal of the trap formerly occupying these vacancies.

It is not, however, merely as veins, beds, and distinct concretions that this trap is observed; it occurs, particularly in the higher parts of the Saguenay, in mountain masses bearing little appearance of stratification; sometimes in masses in which its stratification will scarcely admit of a doubt, and sometimes it is rendered so evident by alternating with other stratified rocks, that no uncertainty can exist on the subject.

The La Boule, by projecting so much into the river, occasions, when the tide is falling, a strong current and counter eddy. Not being able to surmount this current, the boat dropped into the eddy, and running along the base of the mountain on its southeastern side, turned into a small cove, where the height of La Boule was found by an observation to exceed two hundred feet, but by how much could not be ascertained in consequence of the contracted nature of the ground we were upon. The rocks on the northeastern side of the Saguenay, in the bay below La Boule, appeared to have a stratification directed east and west, with a high dip to the north, but this geological feature here was, as it was found to be in many places elsewhere, often of a doubtful character, owing to the contradictory appearances which some of the supposed planes of stratification assumed, and which to reconcile would have demanded more time in their investigation than could be afforded. In recording the stratification of those places where these contradictory appearances were observed, care has been taken to give the predominating bearing only. The evidence which arises from consulting alternating strata is, in the Saguenay, often inadmissible, as the trap sometimes assumes an appearance of stratification which is probably fallacious.

While seated on an accumulation of boulders covering the shore of this bay, rocks of a remarkable sterility were seen on the opposite side of the river, associated with others of comparative fertility, the former possessing an appearance of stratification in which the latter were deficient. The known infertility and constant stratification of gneiss, renders it probable that it is here associated with trap, a rock generally unstratified and of a more fertile character. A question here occurs, Is gneiss more infertile than granite? and if so, why is it the case? the

only difference between them being in the arrangement of the same minerals of which they are both composed. Is it that the foliated character of the gneiss renders that rock more easily disintegrated and reduced to a state of sand, by which the soil of a country where it predominates is impoverished? The fresh water procured in this bay was strongly impregnated by iron.

Availing ourselves of the tide to pass La Boule, we ascended the Saguenay. In Passepierre Bay, the rocks were observed in the northeastern side of the river to have a bearing north and south, and at Baie St. Etienne a little higher up on the south-western side, they were seen, contrary to their general habits, to retire from the shore and to leave a few acres of clay alluvium, on which wild grass is cut annually. Between Pointe St. Etienne and L'Ance aux Foins (another more extensive alluvial deposit higher up) the rocks are particularly worthy of observation for the numerous dykes and contorted veins of trap by which they are traversed. These rocks are stratified, and dip at a high angle to the south. In some places here the trap dykes, which exactly resemble those we have described in their mineral contents, structure, and generally intrusive or interfering character, have the appearance of alternating in strata with syenite. The opposite shore of the river offers the same appearances, but not having landed there nothing more can be said of them.

In the precipitous cliffs on the north-eastern shore of the Saguenay, in the direction of St. Margserite's river, these dykes are very conspicuous, and from their blackness bear some resemblance to upright beds of coal. It is noticed here, as it is elsewhere, that where trap most abounds there is always a more dense growth of timber, and this character is sufficiently striking in many places on the shores of the river, as the syenite with which the trap is usually associated, affords often, by its extreme barrenness, a strong contrast. On one of the islands of St. Louis was observed a rock composed of quartz, felspar, and mica, a genuine granite in composition, but in evidently stratified masses, the bearing of which was north and south, with a high dip to the westward.

On ascending the river at Point Comfort Bay, the rocks were of syenite, in which a little quartz was perceptible; externally they had a greenish colour, owing it is believed to the presence of epidote which very wet weather had rendered more distinct and lively than usual. These rocks possessed a very distinct appearance of stratification to the north and north-east, and dipped to the east and south-east; other contradictory planes were however seen. Many of the rocks in this bay possess a porous exterior.

At nine o'clock of the 12th August the temperature in the shade was found to be 71° Far. and in salt or very brackish water 65°. With the conjectured distance of five hundred and fifty feet as a base, and nearly 45 as an elevation, a height of five hundred and thirty feet was obtained for

a mountain on the north-eastern shore. On the opposite or south-western side the summit of a mountain, in a supposed base of two miles, subtended an angle with the horizon of $70^{\circ} 27' 54''$, which gives thirteen hundred and sixty feet for its perpendicular height, a result as we think much too considerable, although the land appears to rise from the mouth of the Saguenay as high up as Baie la Trinité, where it is conceived to be highest. The precipitous and indented shores of this river afford few convenient situations for measuring a base upon, in order to insure, by a calculation from true *data*, the accuracy of this sort of information.

Having landed a little above la Baie des Cascades, a syenite composed of reddish felspar and a black hornblende was found, and a short distance beyond, the same rock characterized by those remarkable imbedded pieces of trap occurs; they have here either the form of a snake or of angular fragments of an irregular figure, contorted dykes of the same substance were also seen. About this place the river was measured by Mr. Proulx, one of the Surveyors, and found to be about fifty chains. The trap in this instance contained no mica; in other respects it was exactly similar to that before described. One of the specimens of syenite procured here, appeared to be principally composed of light brownish compact felspar; its fracture was flatly conchoidal in the large, but uneven and scaly in the small, with a few small glimmering points, arising from the reflection of light from the polished surfaces of minute crystals of common felspar; however, upon submitting it to the blowpipe, it was found to be infusible, but the heat it had been exposed to disclosed its really granular structure, which induced us to suppose it to be an exceedingly intimate aggregate of quartz, felspar, and hornblende, the leading mineral in excess. This has been mentioned merely to hint at the difficulty which sometimes attends an examination into the mineral constituents of rocks.

Having again put on shore in a very convenient bay, opposite Baie la Trinité, syenitic rocks were met with, or mixtures of felspar, hornblende, and very rarely quartz; the felspar was white, grey, red, yellow and greenish; the hornblende always black. These rocks, as elsewhere on the shores of the Saguenay, were in some places much stained by iron, and Mr. Proulx collected a specimen on the north side of the river, in latitude, as he ascertained by observation, $48^{\circ} 24'$, which was not only much discoloured, but the rock from whence it was taken affected the needle to the amount of $10^{\circ} 3''$. We could perceive magnetism very distinctly in the specimen in question, but it is a very common character here, and was found to exist in many of the specimens brought home, particularly in the trap and some of the syenites abounding in hornblende, to the presence of which mineral it could generally be traced. The rocks had here a dip to the south at a high angle. The fall of the tide was ascertained to be twenty-one feet.

We left the bay about one o'clock, p. m. to avail ourselves of the

tide, and coasted along the north-eastern shore all night. In the morning of the 13th of August we landed in a bay on the left shore, called Ance aux Femmes, directly opposite to HaHa Bay. Here we found a rock containing more quartz than usual, and passing into a syenitic granite, the felspar in which is flesh-coloured. This rock was observed to have the same porous exterior as before-mentioned, nor was this character confined to the surface, as a specimen brought from the place exhibits this character of porosity both internally and externally in so perfect a manner as to afford an excellent sample of a millstone; its quantity cannot be stated, but the writer believes it to be abundant. It should be generally known that good millstones are often found among syenitic rocks.

Several rocks in front of the bottom of this bay which by the rising of the tide are converted into islets, were examined. The first met with was syenitic gneiss, having a bearing nearly north and south, and dipping to the west at a high but variable angle. It sometimes loses its character of gneiss and maintains those only of syenite; the usual imbedded masses of trap are present under all the appearances before described, and one additional. Some of the snake-shaped imbedded pieces (See Plate, fig. 3,) were broken through the middle apparently, and the fragments separated from each other, like the well-known shifts in veins, but no corresponding fracture in the rock was seen.

Almost all the rocks examined in this place were of the same description, differing only in their dip which was sometimes reversed. It was here, however, that we observed for the first time regular and conformable strata of the same aggregate as that found imbedded in the syenite, and to which, from its interfering character in other places, we are unable to offer any other name than the general one of trap, using this term here as elsewhere, without the implication of any theory to designate certain aggregates in which hornblende predominates. Water-worn fragments of compact shell limestone were here seen, the color of which was grey and fracture flatly conchoidal and sharp-edged.

Leaving these rocks, others to the southeastward in the same bay were visited; they bore a great general resemblance to the first in all their features; the trap was, however, seen here to interfere with the syenite in broad dykes, and the former was occasionally traversed by veins of felspar; these veins were observed in some instances to form a connecting link between the syenite above and the same rock below, so that it is not possible to say if the vein has been filled from above or beneath; (See plate, fig. 4,) These veins were frequently observed in other places.

The next rock to the last-mentioned was composed of flesh coloured light brown quartz, and black points of mica, and in which no imbedded trap was seen. To this, trap, apparently stratified succeeded, and then

Fig: 4.

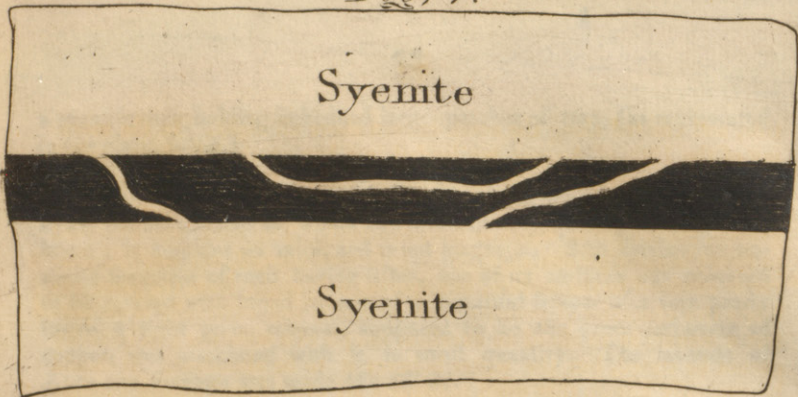
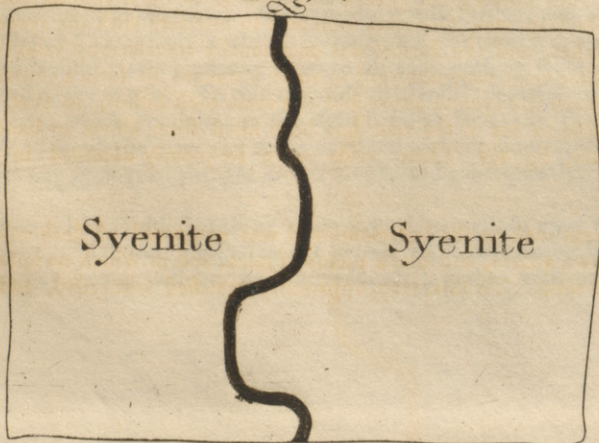


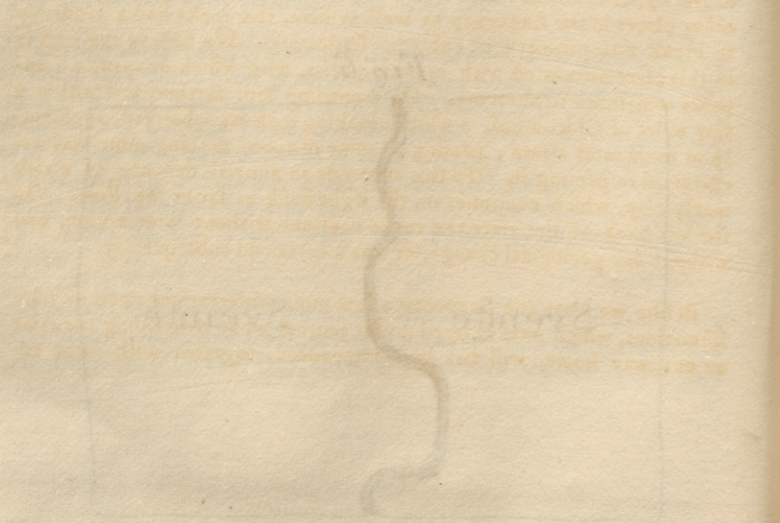
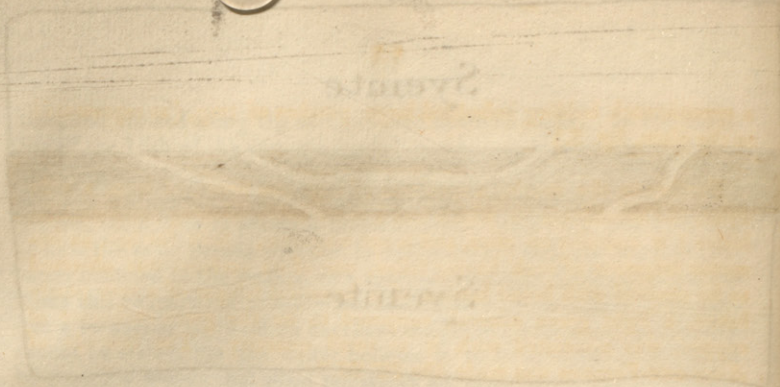
Fig: 5.



Fig: 6.



1871



a syenitic rock holding imbedded large patches of trap, (as represented in the plate, fig. 5.)

Further to the south, a specimen of trap was procured from a wide dyke, the hornblende in which had a remarkably shining semi-metallic lustre; it contains no mica, and is not magnetic. Still further, an immense fragment of rock having fallen, one of its surfaces was observed to be covered with broad laminæ of a beautiful felspar of a very pearly lustre, a light green mineral, supposed to be the green carbonate of copper, was associated with it in small quantity. The latitude of Ance-aux-Femmes was made $48^{\circ} 22' 26''$.

As observations for latitude were necessary to check our courses they were taken at noon whenever the weather would permit; at the commencement of the journey it was extremely unfavourable. Being the only individual possessed of a sextant among those who visited Lake St. John, our observations have the best claim to be considered accurate.

The predominating rock between Ance-aux-Femmes and Cap à l'Est, about six miles higher up the river, appears to be (for it was not touched) the same trap, but syenite was also seen as usual with imbedded patches of the former. Having crossed the Saguenay opposite to Cap à l'Est, we entered a small bay to which was given the name of Bear's Cove: here granite, gneiss and syenite were seen, but no trap. Coasting up the river on the same side, it was seen frequently again under all the forms before-mentioned. Sometimes the trap, rising in black channeled precipices entirely bare of vegetation, exhibited appearances in which a very distant resemblance to architectural regularity might be traced. Sometimes a part of the rock having broken away from below, black escutcheon-shaped masses were left projecting and frightfully pendant over the fragile canoe paddling beneath near the base of the rock: the latter appearance, however, is more characteristic of the opposite shore. No columnar structure was seen, but in many other places in the Saguenay as well as here, the rocks had a tendency to break into prismatic or cuboidal fragments. We believe the trap is in this place associated with syenitic gneiss, with which or syenite it appears sometimes to alternate. On ascending still further, and within a few miles of Chicoutimi, a whitish looking rock was observed, apparently in horizontal strata; passing at some distance nothing more was ascertained respecting it. To this succeeds an alluvial deposit of a rich marly clay, which continues on the right bank as far as the Post. On the left bank of the river the rocks continue without interruption, and without any geological change, as was ascertained subsequently.

Before we leave the Saguenay a few more observations upon its rock formations, which were entered in our journal while descending the river on our way home, will be here introduced, together with some ad-

ditional information which Mr. Proulx's politeness has placed at our disposal.

La Baie des Foins, situated on the left bank of the Saguenay, a little below the Post, is a natural meadow of several acres extent, laying at the base of the mountains which here retire for a short distance from the river. The soil is a clayey alluvium, and, as the name of the place indicates, wild hay grows upon it which is annually cut. At Long Point, a little below Rocky Point, specimens of syenite and syenitic gneiss were procured. Imbedded trap was again seen here.

Having encamped a little above Cap à l'Est, on the western side of the river, and somewhere near our former encampment at Bear's Cove, the rocks were again found to be syenitic, and traversed occasionally by veins of red felspar and quartz; sometimes the two were intermixed. Large dykes of trap occur here, and rounded water-worn fragments of limestone. In a bay, distinguished by four semi-isolated mountains, three of which are of a conical form and situated on the left shore a few miles below Cap à l'Est, the rocks were observed to be the same, and the patches of trap very distinct. The surface of the syenite was yellowish brown, and slightly porous, as if baked, and this appearance was observed in many places, both in the Saguenay and afterwards in the St. Lawrence. The three semi-isolated mountains above-mentioned are the more remarkable, because in general both sides of the Saguenay are characterized by a continuous chain of mountains whose longitudinal outline is only slightly undulated, while their precipitous sides are always towards the river, to which the chain is usually parallel.*

* It will not fail to be observed, that this slightly undulated outline, which is characteristic of both sides of the Saguenay, is at variance with the general direction of the mountain chains in this country, and particularly with those in its neighbourhood. There is great reason to believe that at least one wide valley, running nearly parallel to the St. Lawrence, exists in rear of St. Paul's and Malbay. On ascending the Saguenay we saw no sections of vallies, nor any considerable breaks in its lofty and precipitous banks, until the bay was reached. Upon referring to the accompanying map it will be perceived that this bay has a direction about parallel to the St. Lawrence; it is probably, therefore, the outlet on the Saguenay to the valley alluded to. The general course of the mountain chains in this country is, as has been before observed, north-east and south-west, that is, the same as the vallies of the St. Lawrence. The valley of the Saguenay is from the north of west, and nearly at right angles to it; it is therefore a cross valley. That the rocks on either side of this valley were once united there appears very little reason to doubt, but water must have had very little to do with separating them, at least in the first instance. From the slightly undulated character of the sectional outline of this valley, it would seem to have been once filled by a continuous chain which has been severed longitudinally by some violent catastrophe, the nature of which can only be surmised. It is probable, however, that an earthquake has effected this disjunction; the nature of the rocks, the recorded proofs of the violence of earthquakes on the northern shore in former times, and above all their frequent occurrence at the present day, though no longer of an alarming character, are circumstances which favour this opinion. A great wave would not have acted longitudinally but transversely, or in the direction of least resistance. The magnificent streams which enter this noble river had little effect in forming it, and the operation of tides and maritime currents, though more effectual, can have been only partial and secondary.

Between this place and Le Petit Saguenay, on the opposite shore, such a geognostical uniformity prevails as to render the collecting of specimens superfluous; indeed the same remark is so far applicable to the whole of the country we traversed, that a dozen well-chosen fragments of rock, with the necessary observations upon them, would convey to the geologist almost as much information as he would acquire by going over the same ground himself. Let it not for an instant be conceived, that our observations are believed to be the necessary ones; the writer knows them to be altogether insufficient to convey any thing more than a very general idea of the geognosy of the country.

In a small stream, a short distance below Le Petit Saguenay, the rocks were observed to be intersected in a remarkable manner by veins of quartz and felspar, sometimes alone, at others united together forming an aggregate. Frequently these veins were divided exactly in the centre by a seam of trap; they have the same bearing generally as the stratified rock they traverse, namely north-east and south west, but they are often much contorted without losing ultimately this character. The trap is seen alternating in thick strata also. The predominating rock here is syenitic gneiss. A deception arises sometimes from a source which is not suspected when attempting to distinguish, as is generally easy, by the external surface of rocks, between the trap and syenite; the syenitic rocks have usually a whitened exterior, but sometimes, though rarely, it is as black as that of the trap, in which case a fragment must be detached before the rock can be known. This sort of deception was experienced between this place and Le Petit Saguenay, and it should intimate the propriety of never naming a rock in general, until at least its fractured surface has been seen; decided trap was however often met with in this interval, either in stratified masses, or intruding among other rocks.

In passing between the St. Louis Islands and the south shore, we were obliged to take refuge from the breakers, which threatened to swamp our canoe, by climbing up a projecting mass of greyish granite, on which the night was passed. The mica of this granite was replaced as usual by hornblende, it was therefore syenitic; the former mineral being in all the rocks of the Saguenay country we have seen, very rare and almost entirely confined to some specimens of the trap, in which it occurs in small quantity and minute scales, and this indeed appears to be rather talc than mica, as it is unelastic. We only remember to have seen very distinct scales of mica twice; in both cases they were isolated hexagonal crystals, and one of them occurred in a vein of graphic granite composed of beautiful large flesh-coloured crystals of felspar and large rounded or rather oval shaped nodules of quartz, traversing the last-mentioned rock. Our observations of the geognosy of the Saguenay river terminated here.

From an inspection of Mr. Proulx's notes, and an examination of the

accompanying specimens, the following additional information has been obtained.

The rocks in the neighbourhood of Ha-Ha Bay are counterparts of those already described in the Saguenay, and the same were seen at Point au Fort, Cap à l'Ouest, Petite Pointe, Cap St. Charles, L'Ance François and Baie St. Jean. They are rocks in which felspar and hornblende are always present, in a greater or less proportion, forming syenites and syenitic traps, according as the former or the latter mineral predominates. No instance of the hornblende predominating was seen, except in the black aggregate that has been described, where it not only predominates but in which the felspar is very subordinate. In this aggregate the felspar is always grey and scaly, and bears a great resemblance to quartz, for which it might easily be mistaken, but its fusibility before the blow pipe into a white blebby glass is a sufficient distinction. As might be supposed, when in association with syenite, the trap usually exhibits a striking contrast as to colour, to which the weathered surface of the former rock answers as a sort of foil. No difficulty would be felt in assigning to this rock a place among the "hornblende schists" of McCulloch, were it not for its unstratified appearance in some places, and particularly for its intrusive and interfering character in others; the latter indeed seems to point out the "overlying class" of the same author as its proper position. When quartz enters, as it does rarely among the constituents of syenite, either syenitic granite or syenitic gneiss is produced: it is the latter, when by the arrangement of its hornblende in parallel seams, that peculiar foliated structure which characterises gneiss is the result.

Neither from Mr. Proulx's nor our own observations are we able to state with certainty the prevailing dip of the strata on the shores of the Saguenay, but it lies between the east and the west round by the south. We have before alluded to the difficulty of always determining the stratification, a difficulty which is common to many stratified rocks, but particularly to the masses under consideration which, from their felspar-those structure and association with trap dykes, often sufficiently continuous to resemble strata, present flat even surfaces, and other superficial and linear appearances, by which the hasty or inexperienced examiner may be frequently deceived.

Water-worn pieces of limestone, among the earliest of the secondary class, were noticed in Ha Ha Bay, and a singular trough-shaped mass, composed almost entirely of a grey carbonate of lime, appears to have been taken from a trap rock situated in the first cove on entering the bay from the north; the length of the trough is about two inches and breadth three quarters of an inch; the sides are indurated, and of a dark brown ferruginous colour, bearing the aspect of having been in contact with trap. This trough is half filled with calcareous spar, the exterior of which is covered with a smooth yellowish silky film, as if water-

washed. Professor Cleaveland has the following passage, in his second volume of his System of Mineralogy and Geology, 2nd edit. :—" Real lava does without doubt sometimes resemble basalt, green stone and other trap rocks, but it may be considered as a universal fact that although calcareous spar is often found in green stone and basalt, it is never imbedded in those lavas which have actually flowed on the surface of the earth."*

Several soils collected by Mr. Proulx in different parts of the Saguenay, principally in the neighbourhood of Ha-Ha Bay, having been examined, were found to be as is shewn by the following table :—

No. 1.	Ha-Ha Bay	} A mixture of clay sand and lime, (marly clay)	} Excellent.
2.	Ditto		
3.	Ditto	ditto	ditto.
4.	Ditto	ditto (without lime)	Good.
5.	Ditto	ditto ditto	ditto.
6.	Near Riviere l'Îlet	} ditto and lime	} Excellent.
7.	Between Ri- vers Chicoutimi & Dumoulin		
8.	Ditto	ditto	ditto.
9.	Ditto	ditto, with vegetable matter	ditto.
10.	Ditto	ditto, sand, clay and iron	Bad.
11.	Place not mentioned.	} ditto	} Light but tole- rably good.
12.	Ditto		
13.	Ditto	} ditto, sand, iron, a little clay and vegetable matter	} Indifferent.
14.	Ditto		
15.	Ditto	ditto ditto	ditto.
16.	Ditto	ditto ditto	ditto.
17.	Ditto	ditto ditto	ditto.

The rocks at the Post of Chicoutimi, like most of those we have described, are syenitic; the chapel stands upon a syenitic granite, passing sometimes into syenitic gneiss; this rock is traversed in a remarkable manner by veins of felspar and trap. The trap, however, is generally seen in broad bands forking into the adjoining rock, which is either syenitic granite, or syenite having its felspar greatly in excess. Weather acts more readily upon the trap than upon the granite, and in con-

* By the latter part of this sentence, which is somewhat obscure, we understand those lavas which have been positively ascertained to have flowed, because many geologists assume an igneous origin for all or most of the trap rocks.

sequence many of the veins or dykes are partially empty near the surface. The same was observed in other places. To this cause are probably owing the numerous bays in the Saguenay, as trap rocks were more generally found where they occur, while syenitic granite and syenitic gneiss occupy its capes and headlands.† A few imbedded nodules of magnetic iron were observed in the rock. Sometimes the quartz is absent when it loses the term of granite, and maintains that alone of syenite, in which the felspar is red and the hornblende greenish black. There is on the shore below the residence at the Post a curiously contorted vein of trap which descends the rocky bank, (as represented in plate, fig. 6.)

Detached pieces of felspar of a very crystalline aspect and of a dark purplish grey colour were frequently seen upon the shore; the faces of the laminae possessed a highly polished vitreous and striated surface. They have much resemblance to a felspar rock subsequently found to occupy a large proportion of the shore of Lake St. John, as also to specimens of felspar brought from the coast of Labrador, where they were observed to be associated with columnar and amorphous basalt. One fragment of a silicious limestone was also found. It appears that about twenty years ago lime was made at the Post, and the site of the kiln is shewn where specimens of a half-burnt limestone appeared. It is a very good compact shell limestone of a grey colour. Some of the burnt pieces were white, had a splintery fracture, and resembled chert or hornstone. If there be a natural deposit of limestone in the neighbourhood it could neither be heard of nor found; that in question might have been brought for the occasion from Malbay or St. Paul's Bay where limestone abounds.

It has been before mentioned, that a considerable alluvial deposit occurs here. It consists of fine marly clay, which in wet weather is so considerably plastic and adhesive, as to be traversed with difficulty on foot, when covered by no vegetable deposit. Its essential characters are the following: colour, light french gray—structure, earthy, compact—fracture uneven. In water it falls to pieces rapidly and in acid it effervesces slightly. The undermost beds which are not exposed to moisture, assume the appearance of rocks stratified horizontally, and it is probably this formation which we observed, when within a few miles of the Post.

Upon crossing the Saguenay, opposite the Post, syenite and a rock composed of an intimate mixture of hornblende and felspar, the former in excess, were seen; the latter contained a few scales of mica and points of quartz: it was compact, magnetic, and more resembled basalt than

† To this cause also may be attributed the unusual fact, that almost the narrowest portion of the Saguenay is at its entrance, where the rocks are more siliceous and less amphibolic.

any rock we had previously seen. The syenite was composed of flesh coloured felspar and green hornblende. A few imbedded patches of trap were also seen. From the falls of Chicoutimi, a light coloured syenite was brought, composed of light red felspar and black shining crystals of hornblende. Mr. Nixon returned from a stroll up the river, on its right bank, with specimens of trap, traversed by veins of felspar, and a gneiss, in which hornblende was more abundant than either the quartz or the felspar, and to which the term hornblendic gneiss may be affixed: an aggregate of this description was rarely met with. The mean of two observations for latitude, gave 48. 24'. 9".

Leaving the Post of Chicoutimi, and its polite and gentlemanly resident, Mr. Andrews, on our route to lake St. John, a portage of nearly a league in length, was made to the Chicoutimi river, the same syenitic rocks as those seen near the chapel, which are covered with a thin layer of the marly clay of the neighbourhood, surmounted by the usual vegetable deposit; a good soil, but too near the rock to be very productive. The same soil, to appearance, and always accompanied by the same rock, at a greater or less depth, continues as far as the portage de l'Enfant, after which it becomes sandy and indifferent: some good positions for settlement may be expected in this interval. Although the rocks in many places are known to be near the surface, they were seldom seen, the land on either side the Chicoutimi river thus far being very little elevated. At the portage de l'Islet, however, they are much exposed to view, and consist of syenite, in which the felspar is as before flesh coloured, and very predominating. This rock has very little soil upon it, and the whole of the portage is a barren waste. Before reaching the portage de l'Islet, the banks begin to assume a more elevated character and they continue to increase in height as far as lake Kenwagomi, on the southern shores of which lake, and that of Kenwagomichiche, they have attained an extreme height of from three hundred to four hundred feet. The next portage to that of l'Islet is still more rocky, and on that account has obtained the name of portage des Roches: On a rounded mass of syenite in the middle of this portage, an observation for latitude was taken, which gave 48. 14. 31.

At the north eastern extremity of the portage des Roches, lake Kenwagomi commences. No opportunity occurred of examining any of the rocks upon this lake until we had advanced about two miles beyond Sandy Point, when a projecting point of rock afforded more specimens of syenite. A short distance beyond, a fine grained aggregate was met with, composed of gray quartz and gray felspar, slightly freckled by hornblende, of a greenish colour, the felspar being distinguished from the quartz, by the brilliant reflection of light from the polished faces of its minute crystals. Further on rocks were met with in which felspar of a flesh-red, dark grey and greenish colour was in great excess; hornblende was also present, but in a very subordinate degree, chiefly in patches. The felspar was here in beautiful distinct crystals projecting

Portage de l'Islet

from the rock, under its usual rhomboidal form; these were easily detached, and their laminar structure readily exhibited by the slightest percussion. Magnetic iron was found in some parts of the rock, which strongly affected the compass: much of the hornblende was also magnetic. In one of the rocks here, a mineral was found, which possessed the following characters: colour, a dark greenish brown—opaque—structure indistinctly laminar before the application of heat; occasionally the laminar structure is more distinct, and it then resembles mica.—When pounded in the mortar, small four-sided scales are seen, having a semi-metallic lustre. In its aggregated state, its lustre is glimmering and semi-metallic. It is slightly magnetic before the application of heat; when exposed to that of a candle, it expands, opens like a fan and exfoliates, after which it is easily pressed by the fingers into small flexible but unelastic scales of a bright golden colour. The same thing occurred, by submitting it to the exterior flame of the blowpipe, in which it also decrepitates and is difficult to be retained in the forceps. One of the golden coloured scales in the interior flame of the blowpipe fused into a shining black and highly magnetic globule. With borax it forms a transparent glass coloured by iron. The color subsides on cooling.

The rocks in this place have little appearance of stratification; judging from the little which does appear, the bearing is north and south, and dip nearly vertical. The latitude was here found to be $48^{\circ} - 16' - 22''$ and the approximate variation of the compass was also taken at the same time, viz: sixteen and a half degrees. Being very near the rocks at the time of the observation it was suspected that their magnetic character might affect it, but upon reversing the sights of the instrument upon the same right line, the slightest difference only was observed, which might have arisen from a small degree of inaccuracy in the compass.

Beyond this place a mass of rocks of a very blackened and singular aspect was observed on the northern shore of the lake; and crossing over from the southern, a distance of about two thousand feet, we found these rocks to be almost entirely composed of yellow brown and greenish coloured felspar. In the solid scarp of one of these rocks, resembling that of a martello tower, it was easy, on a near approach, to perceive, notwithstanding its weathered surface, the pearly but subdued lustre of the felspar, and the fibrous aspect which the edges of the laminae presented at the surface of the rock. The stratification of this rock in this place was not very apparent, but a little higher up on the same side it was observed to have a bearing to the north and dip at a high angle to the west.

The imbedded pieces of trap so common on the Saguenay, are again seen here. The land on both sides of Lake Kenwagomi is elevated, but much more on the southern than on the northern. Its course, upwards from Portage des Roches, is at first to the southward of west, but its main course is to the northward of that point. Its length, numerous

rocky capes and bays, and its precipitous shores, cause it to resemble the Saguenay, but its mountains are neither so high nor so barren.

About four miles above Sandy Point, a name which has been given to a low bank of sandy alluvium, stretching out into the lake from the northern shore, there is a dry green bay which appears to enter deep into the north shore and to be free from mountains and rocky precipices for some distance. It is the only place we observed between Portage de l'Enfant and that of Kenwangomi, where land fit for farming might be expected to occur in any considerable quantity.

The portage Kenwangomi is generally supposed to separate the waters flowing into Lake St. John (and subsequently into the Saguenay through Lake Kenwangomishish, La Rivière des Aulnets and La Belle Rivière) from those which pass more directly through the Chicoutimi into the Saguenay; but it is said that this is not, strictly speaking, the case, because a small stream falls from Lake Kenwangomishish into Lake Kenwangomi. Although unusual, this is not a physical impossibility, without indeed, as has been asserted, the waters of the latter are higher than those of the former. This portage is about eighteen hundred paces in length, the first half of which is sandy and the other a mixture of sand and clay. On the latter ash was observed for the first time, and it was frequently seen with elm and other woods, which indicate a good soil (though never in abundance) in our descent from this place to Lake St. John.

Shortly after embarking on Lake Kenwangomishish we touched at an angle of a rocky islet and found an aggregate composed of felspar, quartz and hornblende, a syenitic granite. The coast of this lake is generally to the north of west. Its shores are low, interspersed with elm and ash and fit for cultivation, particularly the northern side. On Lake Kenwangomi the prevailing timber was white birch, and neither ash nor elm was seen. Although the immediate shore of Lake Kenwangomishish on its southern side is low, on retiring back from it the lands become ultimately as elevated as those on the northern shore of Lake Kenwangomi, of which they are probably a continuation.

The river of Alders, the outlet from Lake Kenwangomishish, flows through an alluvium composed of layers and mixtures of sand and clay. The course of this river is exceedingly tortuous, a circumstance often characteristic of these alluvial deposits, and being narrow it is much obstructed by fallen trees, and the entanglement and intertwining of the branches of alder, with which both banks are covered, rendering portages sometimes necessary where there is plenty of water and little current. The portage des Aulnets, however, is occasioned by the river tumbling over the rocks, which re-appear in this place. They are composed of flesh-coloured felspar, green hornblende, and a few scales of black mica, forming a beautiful syenite. The felspar on the surface of the rock

was, as is usual, observed to be in an incipient state of decomposition. The soil examined in crossing the portages in descending the river of Alders was tolerably good. It consists, beneath the usual layer of vegetable matter which characterizes these woodlands, of clay and sand mixed, or in alternate layers, the latter frequently in excess on the surface. In some places the land is hilly, but few rocks are seen. At the north-eastern extremity of the Portage of Alders, a natural section affording the opportunity, a more particular examination of the soil was made and registered as follows:—1st. Decayed and decaying vegetation; 2nd. A layer of sand one foot six inches in thickness; 3rd. Clay from ten to twenty feet in depth, the whole resting on a rock composed almost entirely of grey felspar, in which were observed patches of hornblende. At this place the river of Alders forks in with La Belle Rivière, passing over a picturesque fall occasioned by the felspathic rock before mentioned; the former river is only indeed a branch of the latter, which is observed to widen immediately after this junction from an average breadth of twenty to that of fifty feet.

On descending La Belle Rivière, the land was found to improve considerably in appearance, the same alluvial soil continued, but forming flat and low shores, unaccompanied by hills. Indicative of this improvement, ash, elm and poplar became more common. While on this subject, it may be observed, that although the presence of timber of a certain description may indicate good soil, its absence does not necessarily imply the reverse; for on this excursion, we met with several places in which the soil was decidedly good, without finding it, and wherever found, it was always in subordinate quantity. On the marly shore of the Saguenay, in the neighbourhood of Chicoutimi, we saw none, and yet a better soil could scarcely be met with. To produce a growth of fine timber, something more is requisite than good soil; the land must be opened to warmth, light and air; it must be disencumbered of that heavy mass of decayed and decaying vegetation, with which our forest lands are loaded. If apparently under all these disadvantages, some lands produce good timber, it is only an exception, and no sufficient argument against what has been advanced, particularly as such exceptions are probably owing to one or more of the favouring circumstances being in operation. It should also be remembered, that good soils have a tendency of themselves, by encouraging a rank and dense vegetation of weeds and underwood, to check the growth of fine timber. To judge of the quality of land by the growth of timber upon it merely, is to be guided by the effect, and to lose sight entirely of the cause; a practice, the inconvenience of which, if generally adopted, would soon be felt in every department of science.

As the shores of lake St. John are approached, the soil gradually becomes sandy, until at Kouispigan, as the mouth of La Belle Rivière is called, it becomes one sheet of fine bright sand. *Lid*

Leaving Kouispigan, we proceeded on lake St. John, to the northward, in the direction of La Grande Décharge, and touching at two small rocky islets on our way, collected specimens of a rock composed almost exclusively of a highly crystalline felspar, of a dark bluish grey colour, but in which a little hornblende was present. This rock was observed forming black isolated masses, both on the shore and in the water, on this side of the lake. Having encamped on one of these, at the entrance of La Grande Décharge, we had more leisure to consult the characters of this rock, which are as follows : it possesses no sign of stratification ; its surface is remarkably black, particularly when moistened, and often almost semi-metallic : it is frequently flat and tabular ; many portions of it attract the needle, although the eye can detect no magnetic iron ; its structure is compactly crystalline, in some cases passing into compact, but there are always to be seen some shining, often splendid faces of the laminæ, of which it is composed, and they are frequently striated. In many respects it bears a great resemblance to Labrador felspar, but its iridescence is wanting ; it is occasionally traversed by veins of red felspar, and rarely small portions of its surface were covered with a brownish red powder, probably an oxide of iron. One of the veins traversing this rock, exhibited a curious phenomenon ; the substance of the vein itself, composed of felspar and hornblende, was not magnetic—the sides of the vein composed of the felspathic rock we have described, were strongly so ; and Mr. Hamel further ascertained, that the south side of the vein attracted the north pole of the compass, and the north side the south pole. To remove the chances of error, the experiment was repeatedly tried, with success, both by applying the compass to the sides of the vein, and detached fragments to the compass. The vein was about three inches thick, and had a N. W. bearing. When the compass was laid on the centre of the vein, the local attraction was observed in one place, to be equal to ninety degrees ; in some parts of the same rock it was still more, even to a complete reversal of the needle : At a subsequent period, the place was again visited by Mr. Hamel in company with Mr. Nixon, and these observations confirmed. Upon our return home, the specimens which had been examined, were re-examinèd, and found to possess a feeble magnetism, but no polarity. The islet upon which the foregoing observations were made, forms one of a cluster at the mouth of la Grande Décharge, to which the name of Dalhousie was given ; none of them appear to be more than twenty feet above the water.

On leaving this place a northerly course was again taken until, reaching a fine sandy shore, we landed for the purpose of measuring a base preparatory to a survey of the lake about to be commenced by Mr. Hamel. These sandy shores are very characteristic of the lake, and add very much in our opinion to its beauty, though nothing to its fertility. Where no rock appears, fine shining yellow sand is substituted, and where they appear together, the former rises through the latter assuming that isolated appearance which has been mentioned. (This sandy

girdle is not confined to the margin of the lake, but passes a short distance into the interior, bestowing upon the land forming the borders of the lake, an infertility of aspect which vanishes upon passing these sandy limits. The greater portion of this sand is yellowish white, but a dark reddish brown variety was often seen deposited upon it in continuous ripples at different but parallel levels. On examining this sand it was found to be composed principally of magnetic iron and precious garnet. It is an analagous compound to the emery of commerce, and if reduced to a greater degree of fineness, might be employed for the same purposes. The rocks here were found to be the same as at the last place; they have externally often the aspect of old lead, and when broken the faces of the laminae possess a lustre which is at the same time almost splendid and semi-metallic. Upon commencing operations, Mr. Hamel found between twenty and thirty degrees of local attraction, but in one spot, free from it, he determined the magnetic variation to be $16^{\circ} . 40' W.$ On these rocks *tripe de roche* is found in some abundance; it is of a deep copper brown colour, and agrees well with the drawings of it to be seen in the appendix to Franklin's quarto edition of his first Journey to the Artic, Sea. When we first saw them they were mistaken for representations of some of the native copper ores which he met with among the copper mountains. To the taste it has the flavour of mushroom, and although meagre it is not unpalatable. The sandy beach here is enclosed by two rocky points, forming a bay about fifteen or sixteen hundred feet wide, the water in which shoals very gradually. A sand bank about fifteen feet high encloses this bay on the land side, beyond which there is a sandy swamp; and this is descriptive of much of the lake on this side.

(On leaving this bay and proceeding again to the north,) we doubled the rocky point, which was found to be composed of the same felspar before met with, as was also another we rounded soon after, situated at the entrance of an inlet up which we ascended mistaking it for the Koucouachime river, and where we found a very good soil consisting of a yellowish loam, about one foot six in thickness, resting on plastic clay. As the term loam, like that of marl, is often used without conveying any very distinct idea of what is meant, either to the person who uses it or to the person to whom it is addressed, we will here explain, that wherever it has been used in this report, it has relations to mixtures of clay and sand (the former in excess) generally coloured by iron, but containing no lime; in short an earth of which bricks are made. To avoid misconception, however, the term has not been often introduced. Mere deposits of clay are often called marls, by which an erroneous idea of a country may be conveyed; it should not be forgotten that the presence of carbonate of lime is necessary to constitute a marl or marly clay, which is known by its effervescence in acid; such a soil is of the best quality, whereas clays are proportionably infertile as they approach to a state of purity.

Returning to the mouth of the inlet, our northerly course was resumed,

and several hundred yards of a coast, composed of rocky points, jutting out into the lake, and enclosing fine sandy beaches between them, were examined. This, as has been before said, is the character of the lake here. The remarkable uniformity and simplicity of the rocks, hitherto met with, are worthy of notice. We could only make the following observations which differ from what has been described—viz: kidneys of the rock, coated with the brownish red powder we have before mentioned, were seen imbedded in the rock itself; they were at first mistaken for pieces of magnetic iron—and a bed or broad vein of compact felspar, of a light yellowish green colour, was seen traversing the rock, contrasting strongly with its dark associate. It differed from those minerals which it most resembles, by yielding to the knife and fusing before the blowpipe, into a white blebby glass, like the rest of the felspars. The surface which had been exposed to the atmosphere, was decomposed, carious and of a reddish or yellowish white colour. An observation for latitude was here taken, and gave $48^{\circ} . -37' . -59''$.

On leaving the mouth of the Koucouathime river, which is situated about one mile to the north of the place of our last observation, a fine sandy shore marking the interval, our course was north 70° . west to the northernmost point of Koucouathime Bay, where the shores begin to be swampy; but sandy beaches were still occasionally observed, with partial deposits upon them of the same admixture of garnets and magnetic iron before-mentioned. Putting on shore in one place we observed low parallel ridges of this sand several inches in width and depth, giving a character to the spot. Embarking again the same course was followed, and the shores became lower and more swampy as we advanced, indeed there appears to be very little difference of level between the lake and the land. In this portion of the former, and from one to two miles from the shore, you are surprised to find no more than three feet of water. This extreme shallowness is common to the lake (the depth of which in no part of it bears any proportion to its extent) and is the cause of the sea-like turbulence its surface assumes after the least wind, occasioning a violent ground swell and lofty breakers, to which, at a distance from the shore the hardiest *voyageur* is frequently unwilling to expose himself. Upon placing the hand in the water on these occasions it felt very decidedly tepid. This shallowness and unusual temperature, by occasioning a more rapid evaporation, may account for a fact which it might otherwise be difficult to do, viz: (six tolerably large rivers and several smaller ones fall into lake St. John, while only one of moderate dimensions runs out of it.) *vd*

Continuing a northerly course the mouth of the Peribonea river was reached, where the latitude was found to be $48^{\circ} -42' -37''$, and this was the greatest that was made on the lake. *vd*

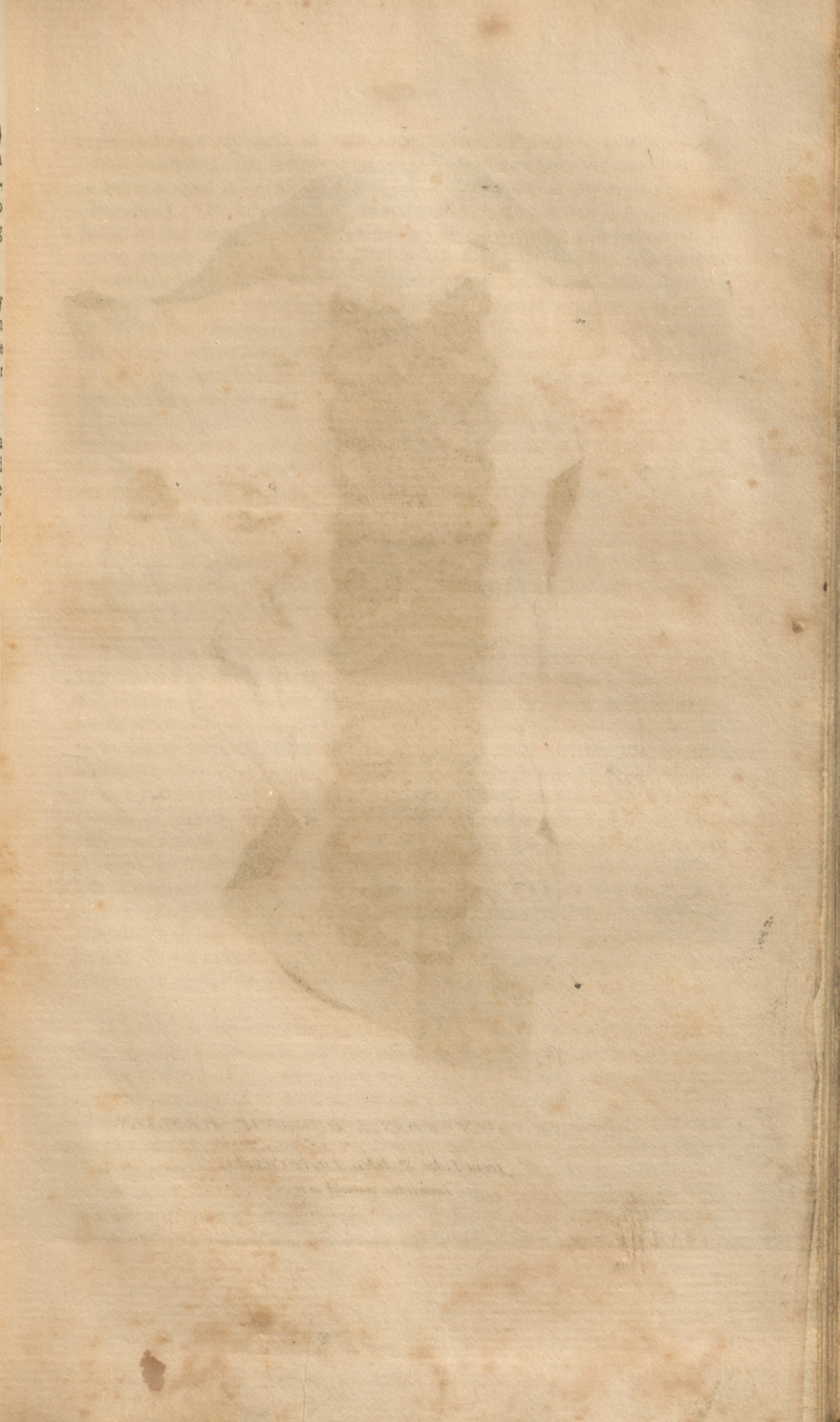
In about three hours after leaving the Peribonea river we reached a bay, at the bottom of which we encamped, and found a considerable de-

posite of a very fine admixture of clay, siliceous and lime (an excellent marl) underlying the sand. Finding deep water close to the shore, and a current setting from the northward out of an angle in the bay, it was conjectured that the river Mistassiny lay in that direction, which proved to be the case, and another observation of the sun's meridian altitude having been taken at its mouth, gave for latitude $48^{\circ} 38' 55''$.

Ascending the Mistassiny a short distance, the land though sandy appeared to improve, but neither here nor in any part of the lake, nor in the whole of the country we traversed was very good timber, remarkable for its abundance, perceived. Reasons have already been advanced for not considering the absence of fine timber as any proof of a bad soil.

On leaving the Mistassiny we proceeded to the Assuapmousoin on a southerly course. On crossing the mouth of this river we encountered a violent tempest; there was however no danger being near the shore and in shallow water. Upon the tempest abating we landed and encamped. Here we again fell in with rocks which had entirely deserted us since we left the bay to the southward of the Koucouathime river; they are of a different formation, and consist of clay-slate and fetid limestone in conformable strata. The clay-slate which was first met with is composed of an indurated schistose clay, exceedingly fissile, and assuming many of the characters of roofing slate. It occurs on the shores of the lake, and dips beneath its waters to the N. N. W. at an angle of 25° . The laminae of the clay-slate are parallel to the planes of stratification, which is probably the cause of the extreme fissility of the rocks in that direction; but perpendicular to these planes, or nearly so, are others which serve to perplex the examiner when wishing to ascertain the bearing of the stratification of this rock; however their want of continuity and particularly the conformable position of the clay-slate with regard to the limestone, remove the difficulty. The surface of the rock is strewn with its weathered fragments, which exhibit no other change from the rock itself than that weather has rendered its fissile character more apparent; these fragments when slightly struck on their edges break into smooth rectangular slates. Solid slates five feet long, one foot wide, and one or two inches in thickness are seen; fragments of this description are very sonorous when struck.

After traversing this clay-slate for about one quarter of a mile, the fetid limestone before-mentioned was met with *underlying* the other conformable strata. Much of this limestone contains fossil organic remains, chiefly corallites and encrinites; productae were also seen, and a singular fossil similar to a variety found in Drummond's Island, Lake Huron, of which there is a drawing in the sixth volume of the Geological Transactions, plate 30, fig. 5, from which that in question appears to differ chiefly by having the disks of which it is composed obliquely set on, whereas in the figure alluded to they have a rectangular position. That from lake St. John also tapers more than the other. The





I. F. DeLong del.

J. Smellie sc.

AN UNKNOWN FOSSIL ORGANIC REMAIN

from Lake St. John. Lower Canada.

Drawn the natural size.

cross fracture exhibits a structure which is partly compact and partly laminar; the former appears to prevail towards the parietes, and to be composed of chalcedony or of a carbonate of lime passing into chalcedony; the latter occurs towards the centre, which is a calc-spar. Between the two there is also perceived a tendency to the formation of agate, chalcedonic rings and curves being distinctly visible. Sometimes the centre has nothing of the crystalline aspect whatever, but shews a rounded spot of a reddish-brown and opaque substance, apparently of the nature of the imbedding rock, which is a dull fetid limestone of a dark colour, and full of fossil remains. Close to the one here drawn, but at the back of the specimen, there is a producta. This character of becoming siliceous is common, but in a much greater degree, to the fossils from Drummond's Island, Lake Huron, with the species of which those found on Lake St. John appear to correspond. The fossils however of the former are not only more siliceous, but the limestone itself in which they are embedded has been in some places metamorphosed into a chert or hornstone.

For the accompanying very accurate drawing of this fossil, we are indebted to Lieut. Ditmus, 66th Regt., ample justice to which has been done by the engraver, Mr. Smilie.

This limestone appeared to be separated from the clay-slate *above* it by a thin black shaley calcareous stratum, full of short undulations and rounded concavities occasioned by corresponding projections and spherical knobs in the limestone. These knobs or balls could sometimes be detached, and were found to be composed of a very compact dark grey limestone, having a glimmering lustre arising from the reflection of light from a few crystalline points, and a *water-worn* aspect. In these no vestige of organic remains could be perceived, although a slightly fetid odour indicated their presence originally. The stratum of limestone in which they were imbedded appeared equally free from organic remains, but was of a more earthy texture. The thin black shaley stratum is itself a limestone, as its free effervescence in acid declares, but it appears to contain much clay and to be passing into clay-slate. The position of these balls we conceive is corroborative of the inferior level of the limestone with regard to its planes of stratification.

It is with much hesitation that we have ventured to state our opinion that secondary limestone here underlies clay-slate, because we know that such a position, if not altogether new, is at least of very rare occurrence. But as our province is to describe and not to theorize, we should have advanced still more improbable suppositions if, after the same unprejudiced research, there had been cause in our opinion to entertain them. The knowledge of natural history is very little likely to be extended if her votaries restrict themselves in their reports to what the existing knowledge on the subject may render probable. Having taken the trouble to examine, if an opinion be advanced (with humility proportion-

ed to the degree of information) which is strongly opposed to experience, no censure is justly due though it prove erroneous. Some beautiful specimens of encrinal marble of a fawn colour are found here which would polish well and prove highly ornamental.

The limestone continued in visible strata for above one hundred and fifty feet, after which it appeared only in angular fragments for about a mile and a half further, when it again was seen in regular strata, forming a projecting point in the lake, the intermediate portion of the shore being characterized by a numerous collection of boulders consisting of granite, trap, mica-slate and angular fragments of clay-slate. Having seen no mica-slate before while in the Saguenay country, we may have mistaken trap for it, the pseudo-metallic lustre of which, as we have before said, causing it often to resemble that rock. Two or three semi-rounded masses of the felspathic rock near La Grande Discharge were also seen.

The stratification at the above-mentioned point is obscure, but it appears to dip gently to the east. Much of the limestone had a very conglomerated aspect, or at least it appeared to be made up in a confused manner of pieces of itself, though no distinct imbedded fragments were seen. It contains imperfect fossil remains of corallines and orthocera.

Proceeding beyond this point the shore became gradually crowded to excess with fragments of various rocks principally of limestone. Rocks under the form of boulders were also very common, and as before, angular pieces of clay-slate. The number of these boulders, generally about the size of the head, rendered our walk over them painful in the extreme, the beef-skin mocassin being by no means a sufficient protection in these cases to the foot unaccustomed to wear it.

Embarking and crossing over to a cliff about thirty feet in height, called Pointe Blue, it was found to be composed of the same fetid limestone in distinct horizontal strata. Organic remains are found in this rock, but they are generally indistinct. Embarking again for the south-eastward, the limestone was observed to continue on the shore, and at another point resembling Pointe Blue it forms a similar precipice on the lake. A little beyond this we put on shore, and found the same limestone forming a low beach. A cedar was measured here the girth of which was twelve feet, it was however by no means characteristic of the place, although the soil appeared to be much improved since meeting with the lime-stone and clay-slate, a circumstance that was to be expected. At the bottom of a bay beyond this place the same horizontal limestone forms the shores and bed of the Little or Ouitchouanitch river which, as a rapid here falls into Lake St. John.

Running once more to the south-eastward we encamped on a bare

limestone point opposite L'Isle des Coulevres. Some of the *voyageurs* had the greatest disinclination to visit this island on account of the number of snakes which were reported to exist there, and many wonderful stories of their forming festoons, knots, and lying together like a string of sausages, were told; but after traversing the whole island one shrivelled skin only was seen. Pears too (probably under the guardianship of the snakes) were said to be abundant with equal foundation. The shores to the northwestward were abundantly strewn with many fragments of corallites, among which we recognized caryophylliæ, chain coral, madrepores, retepores, millepores, and particularly that corallite so much resembling a bee's hive, and called favosite. The varieties of caryophylliæ resembled those to be seen in the sixth volume of the Geological Transactions. Some of the madrepores might easily be mistaken for the fossil eye-teeth of some animals, but their internal radiated structure distinguishes them. (turbiniolæ?) All these fossils have been probably washed up from the bottom of the lake, the island being apparently a mere sand bank. There is another island near it which, judging from descriptions is probably composed of clay-slate.

On leaving the former island we stretched across to the main, and entering a bay reached the mouth of the Outchouan, where another deposit of clay-slate was noticed. This slate differs from the other in the following particulars:—the strata are horizontal or nearly so; it is not observed to be here associated with any other rock: its weathered surface is white, whereas that of the other is black. It effervesces in acid very slightly, and contains slight traces of organic remains, neither of which characters was observed in the other; it is in greater abundance and more easily quarried.

A person unacquainted with the deceptive appearances which rocks sometimes assume, would without hesitation pronounce this rock to be horizontally stratified, and in our judgment he would be correct; but there are other surfaces which have a parallel arrangement among themselves, and which might easily be mistaken for planes of stratification, particularly as their position is vertical and one which agrees better with the high dip the clay-slates so generally exhibit. However upon a closer examination of these planes they are found to suffer constant interruption and not to be continuous. The horizontality of the strata being here assumed as the fact, of which we entertain no doubt, the laminæ of the clay-slate are as before parallel to the surfaces of stratification. This rock is divided often, owing to these counterseams, into cuboidal masses and longitudinal frustra of pyramids, the latter sometimes resembling the blade of a stiletto. Whether you strike the rock on the edges of its laminæ or across the surface, a fracture in the direction of these laminæ is effected, accompanied of course in the latter case by the cross fracture. Above and in immediate contact with the clay-slate, is a remarkably fine bed of compact marly clay, to which cause the slight effervescence of the former is probably owing. Fragments of clay-slate are abundant on the

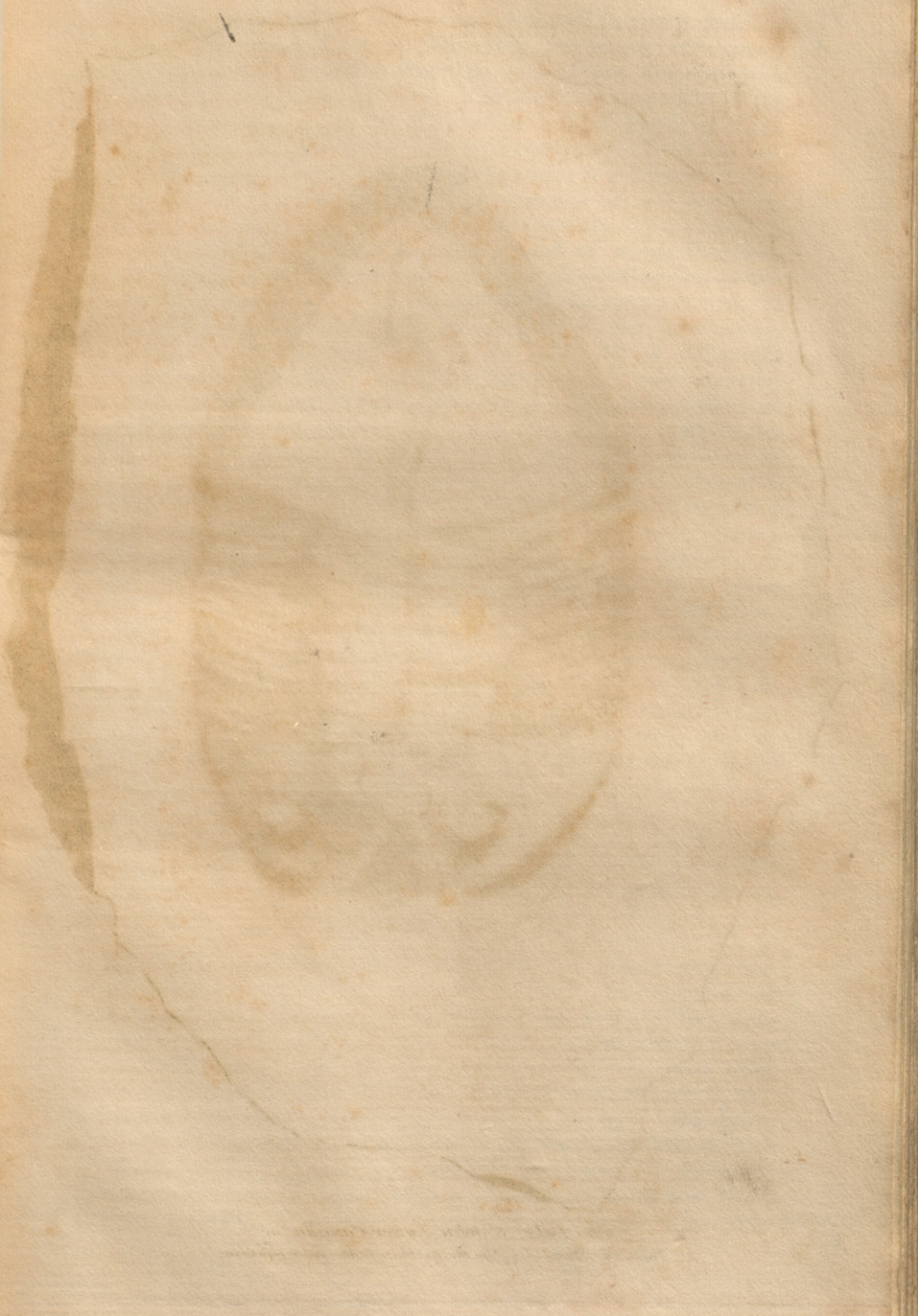
shore in this place, and those of any other rock are rare. The latitude of the Ouitchouan river at its mouth was determined to be $48^{\circ}-24' 35''$.

Between the Ouitchouan and the Post of Metabitchouan we observed the same formation to continue for a considerable distance, beyond which we again came upon the limestone, possessing the same characters as before, but dipping to the northward at an angle of 45° . This appears to be a further corroboration of our opinion, and to infer the additional conjecture that the two rocks alternate with each other, otherwise the limestone must suffer a violent contortion to appear in the interval, between the two deposits of clay-slate, in horizontal strata at nearly the same water level, as has been described.

This alternation with fetid limestone suits the habits of the shales far better than those of the clay-slates to which they sometimes bear a striking, and to the eye an indistinguishable, resemblance, a fact which is remarkably exemplified in the present instance if this rock should prove to be a shale, which, after consulting its mineralogical characters, we are strongly of opinion it is not, although it cannot be concealed that the case appears a doubtful one. That the reader may be better able to form his own opinion on this point we here introduce those characters:— Colour, brownish black—opaque—structure really schistose, but apparently compact—cross fracture, uneven, somewhat conchoidal—hardness about the same as clay-slate—color of powder and streak, reddish—odour slightly bituminous when struck—specific gravity 2.4. In water its surface is covered with minute bubbles, *but it neither falls to pieces in it nor derives additional weight even after a long immersion*. A specimen from the last-mentioned place effervesces very slightly in acid, a character which is supposed to be owing to the proximity of the marly clay. Before the blowpipe it fuses readily into a globule of glass, having a dirty green or brown colour. Experiments alone can determine whether this rock is calculated to answer the purpose of a roofing slate; this must depend upon its possessing a requisite degree of fissility, and upon its power of resisting the action of the atmosphere: our opinion upon both these points is favourable, but it is only derived from a hasty view of the quarry. With regard to our geological dilemma, without wasting more time in the attempt to reconcile apparent contradictions, which a more intimate acquaintance with the *locale* would probably clear away, we will continue to relate facts. The limestone at the last-mentioned place forms a bluff precipice on the shore of the lake, and contains corallites, encrinites and productæ. The encrinites were as before in a fawn-coloured variety, well calculated for an ornamental marble; some of it has the conglomerated aspect before described.

* Pursuing our route, we reached the post of Metabetschuan, which we found by observation to be in latitude $48^{\circ}-23'-11''$. Like the Post of Tadousac, that of Metabetschuan is situated on an alluvial bank, though differing in the materials which compose it. It is here a soil in

THE UNIVERSITY OF CHICAGO



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GIGANTIC TRILLOBITE.



L. F. Dillman del.

from Lake St. John, Lower Canada. —
Drawn the natural size from the specimen in the writers possession.

J. Smilie engr.

which clay predominates, but contains sufficient sand to give it fertility) Boulders of the rocks of the neighbourhood, and among them water-worn fragments of the secondary limestone we have just described with their imbedded fossils, are frequent. The fossils are generally of the same class as those found on the Manitouline chain of islands in Lake Huron, and have been mentioned. The most remarkable of the fossil remains we saw, was a trilobite (*entomolites paradoxus* of Linnæus.) (See plate.) It is believed to be one of the largest that has ever been seen, and is deserving of notice, belonging as it does to a class of animals with which naturalists are totally unacquainted, and of which Parkinson says, "We must content ourselves, I believe, with allowing that no animal resembling it is known." It is supposed to be a species of crab. A drawing of the same animal, though not precisely of the same variety, may be seen forming the frontispiece to the 3d edition of Bakewell's "Introduction to Geology." Although the trilobite is very characteristic of the limestone in the Lower Province, it is the small species; no other gigantic specimen has been noticed; Dr. Bigsby, however met with it on Lake Huron. Some sections of the pigmy trilobite (if such an expression may be allowed) from Beauport and Montmorenci, bear a strong resemblance in form to moths. We have in our possession an organic remain from the latter place, which appears to represent a trilobite inserted in the siphuncular cavity of a small orthoceratite. If this conjecture be correct, it is worthy of attention, because it agrees with the known habits of the crustaceous tribe of animals which seek their food by entering into shellfish. Univalves have been brought up to Quebee from the Gulf of St. Lawrence, in which when partly mutilated, may be seen small crabs that have probably perished in an ineffectual attempt to retreat. A suitable punishment that should await all murderous intruders who steal upon the privacy of others, whether their object be to destroy life or to kill time.

The accompanying copper-plate impression is by Mr. Smillie, from another accurate drawing with which we were favoured by Lieut. Ditus. In both cases the engraver had also the advantage of consulting the specimens.

This trilobite is upon very schistose limestone, of a dark grey color internally, and yellowish white weathered surface. The fragment in which it was found is angular and detached; it had been used as a stepping stone to one of the outhouses at the Post, and probably had been brought by the ice to this shore from a place on the lake about three miles to the westward, where we found a limestone very similar to it, having a variable dip to the northward of from 10° . to 45° . and underlying a very schistose black limestone containing the impressions of small terebratulæ, and giving out a very fetid odour when struck. Although schistose in the large, this latter rock was very compact in the small, and would probably afford beautiful black slabs of marble. The schis-

tose character, together with its black color, might occasion it to be mistaken for clay-slate, particularly as we have before described that rock as holding a similar position with regard to the limestone; but that position itself, the violent effervescence of the rock in acid, its imbedded organic remains and fetid odour, remove all doubt on the subject. The fawn coloured limestone was again observed here; it appears to be in considerable abundance. A large angular mass of white laminar marble was seen upon the shore; the rock itself must be near but probably at the bottom of the lake, from whence the mass in question has been thrown up.

From the Post of Mitabetshuan, conceived to be the most southerly point of the lake or nearly so, the River Peribonea, about its most northerly point, bore north—La Grande Descharge, N.E., and nearest point to the eastward, E.

We ascended the Metabetshuan River a short distance as far as some rapids; the right bank or that to the eastward, was found to be composed of a mixture of clay and sand, forming an alluvial ridge from fifty to eighty feet high. The western side of the river is low. Wheat, barley, oats, kitchen stuff of various kinds, cucumbers and melons, grow here to perfection; neither soil nor climate can therefore be bad. Having broken the thermometers in the early stage of our journey, all our reports are deficient in thermometrical observations. Judging from our feelings and the agricultural facts above mentioned, there appears to be no difference between the climate on Lake St. John and that at Quebec. Mountains bound the view to southward of the Post, and at no great distance among these, we heard that a large deposit of a mineral, which from the description given of it, must be steatite or soapstone, is found. It probably marks the primary character of the mountains in which it occurs; near them the junction of the primary and secondary rocks may be expected to take place. We did not see it, for the clay-slate, although usually a primary rock, is here, by its alternation with fetid limestone, evidently of the transition or secondary class.

After crossing a turbulent sea, we arrived once more on our way back, at the mouth of La Belle Rivière, having completed the circuit of Lake St. John.

Before we take leave of this lake, we will here introduce a few remarks upon the general fertility of the land in its neighbourhood, which have occurred to us as explanatory of the cause of it.

When first the reports* of the House of Assembly respecting the Sa-

* With regard to these reports, it is only justice to say, that after having attentively examined them, we think they are as creditable to the individuals who collected them as they are to the persons from whom they were obtained. We have, generally speaking,

guenay Country came under our observation, we were at a loss to account for this fertility. We imagined Lake St. John and the surrounding country to be, as it really is, a large basin, of which the lake is the lowest portion, with rivers running into it from all points of the compass save one, and bearing with them the drainage of the lands they traversed. Supposing these lands to be composed almost entirely of rocks of the most infertile characters, such as granite and gneiss or aggregates in which silex abounds, they could not be looked to as the sources of the fertility in question. In this dilemma the action of a violent deluge was had recourse to, which by bringing soils from distant quarters, had accumulated here the materials of future fertilization. With this impression we visited the country. It was found to be composed, instead of granite and gneiss, for the most part of rocks which, however infertile some of them may be as such, are made up of minerals almost exclusively, the decomposition of which furnishes the best soils; such are syenite and trap rocks. On casting our eyes over the fine alluvial soils which characterize the country about Lake St. John and Chicoutimi, they exhibited no indication of the action of a violent deluge; on the contrary, they were found to be composed of the finest particles, which could only have been deposited in quiet waters.

On visiting Lake St. John, we found a rock forming a large portion of the shores and of its neighbourhood, the decomposition of which forms the finest clays. A little farther on the same lake, clay-slate and limestone are found to occupy a still larger portion, the former rock almost always associated with fertile soils furnished by its desintegration, while the latter, with few exceptions, need only be named as forming a portion of any country, to convey at once the fertility of that portion.

Examine the limestone: you find it the depository of the exuviae of animals, tenants only of the ocean which now form a part of almost every one of its generally horizontal strata. The inference is obvious:—they and the limestone have been deposited here together, when Lake St. John and the surrounding country were covered by the sea; and it is almost equally obvious to us, that the fine clays and marls, in which this country abounds, are the washings of the decomposing rocks, which being first suspended in the water as an impalpable powder, afterwards subsides at the bases and on the gently sloping sides of the rocks from whence they are derived.

Mr. Nixon, upon his return, kindly furnished the following specimens of Rocks and Earths, with the information as to where they were procured:

found them to be correct, and it will be seen that the latest reports rather confirm than afford any new information respecting the fertility of the soil and its capabilities for settling. Both Mr. Tasche's and Mr. Panet's plans also, considering they are mere sketches, are very faithful.

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ROCKS.

- No. 1.—Of felspar alone, similar to all the rocks from the Grand Décharge to Koucouathime river.—From the second rapid on the Peribonea river this specimen was taken, and Mr. Nixon describes the same rock as extending from the foot of the first rapid to the foot of the third fall, forming rocky banks on both sides; what soil there is in the distance is sandy. This rock was traversed by a vein of granite, the felspar in which was in large crystals and greatly predominating.
- 2.—A detached mass of magnetic iron near No. 1.
- 3.—Like No. 1.—From the great falls on the Peribonea.
- 4.—This is an equable mixture of hornblende and felspar, the latter having a glandular arrangement in the former bearing some resemblance to porphyry. In naming rocks composed of hornblende and felspar, we have invariably in this report called those traps in which the former mineral predominates, while the term syenite has been restricted to those in which the felspar is the most abundant mineral. In the present instance therefore in which there is no predominancy of either, both terms are equally applicable, but we have chosen that of trap because the felspar in it, by its resemblance to quartz, bestows upon the specimen in question a character of coincidence with the trap we have described, which character is wanting in the syenites—From David River.
- 5.—A mixture of hornblende and felspar, the former predominating—consequently a trap—from the falls of the River Ouitchouan, two hundred and thirty-six feet high, according to Mr. Bouchette.
- 6.—Similar to No. 1.—From La Petite Decharge—a vein of white felspar traverses this rock.

EARTHS.

- No. 1.—A mixture of sand, clay, vegetable matter and iron—The sand in excess—indifferent soil—River Peribonea.
- 2.—The same as No. 1—with little or no iron—R. Peribonea.
- 3.—A loam or brick earth—good soil—Lake Nohaduito—taken from under the vegetable matter.
- 4.—Sandy bad soil laying beneath No. 3, a foot deep and resting on No 5.
- 5.—A good marly clay—same thickness as No. 4, and resting on No. 6.
- 6.—An excellent marly clay.
- 7.—A fine dark vegetable mould, twenty paces from the edge of a rivulet running into Lake Nixon.
- 8.—Mixture of clay and sand—tolerable soil—do.
- 9.—Sand, clay, vegetable earth and iron—light and sandy—do.

10.—Ditto ditto ditto—River Baddeley.

11.—Sand and vegetable earth—poor soil—ditto.

Upon reaching Tadousac, on our return home, its latitude was made, $48^{\circ} 6' 38''$ —and immediately afterwards we entered the St. Lawrence, on our way to St. Paul's Bay, passing Pointe aux Bouleaux, of which some account was given in the early pages of this report. Between Pointe aux Bouleaux and Echaufaud des Basques, nearly isolated masses of what was considered to be granite, were seen; they are shaped like a dome or rounded hay-cock, but generally the outline of the mountains on the coast, did not differ materially from that of the Saguenay; the former are not however so precipitous. Having landed at Echaufaud-des-Basques, the predominating rock was found to be syenitic granite, in which trap was observed, forming dykes or veins. A vein composed of red felspar, quartz, hornblende and magnetic iron, traverses this rock. Flesh red crystals of felspar, and white masses of quartz, forming large distinct concretions, were seen under the same circumstances. From a detached mass of syenitic granite, large kidneys of a fine black hornblende were taken, and also a beautiful specimen of light blue felspar having the lustre of satin.

The surface of the rock here, was observed to have the same baked and porous aspect as before described. This appearance is not in all cases confined to the surface. A specimen brought from Ance-aux-Femmes, in the Saguenay, has been already described, as possessing the character of porosity, both internally and externally, in so perfect a manner, as to be a fair sample of a mill-stone.

It would prove a mere repetition to be as circumstantial in our description of the rocks, on the north shore of the St. Lawrence, between Tadousac and Mal-Baie, as we have been between the former place and Chicoutimi—We will therefore confine ourselves to a few remarks which will embrace those striking or important differences observed.

Though trap was occasionally seen, forming dykes, veins and imbedded pieces in the predominating rock (a syenite, syenitic granite, or syenitic gneiss,) no rocky masses of it, whether stratified or unstratified were perceived. It is not meant to assert, however, that they may not be found, but only to imply, that they are by no means so common as in the Saguenay river, particularly in that portion of it between Chicoutimi, and La Buole, from the last of which places, towards the mouth of the Saguenay, the rocks become more quartzose and less amphibolic or hornblendic, and pass from trap and syenite into syenitic gneiss and granite. To this latter cause may be attributed the comparative narrowness of the river at its entrance.

companies the Mal-Bay River in rear of the settlement. Walking through the fields at the back of Mr. M'Nicol's house, we observed several small cone-shaped hillocks from fifteen to twenty feet high composed of alluvial soil, which from their form and isolated appearance were supposed to be in some way connected with the cause of the earthquakes.

Availing ourselves of the high tide we left this bay, but were detained a few hours at its westernmost point by the roughness of the river. This interval was occupied in examining the limestone rock of which the point consists. Like that on the eastern side of the bay it is one of the oldest of the secondary class, and contains numerous organic remains, principally orthoceratites. The weathering of the rock exhibits many longitudinal sections of these fossil multilocular univalves, giving them something the appearance of fish-bones for which they have been mistaken. It is well known to those who interest themselves on the subject, that the fossil corallines of the *genus huronia*, of which there are some beautifully correct drawings among the plates to the sixth volume of the Geological Transactions, bear a remarkable resemblance to vertibræ, so much so as to have deceived professional men, of these however we saw none. Some of this limestone is of a very siliceous character and appears to pass into sandstone; some again is conglomerated, and holds imbedded rounded fragments of white quartz; in this the fossil organic remains appear most to abound. In the upper portion of this limestone there is a small cavern into which you may descend for a few yards. The sides and roof are in many places coated with a white incrustation, having none of the crystalline aspect of stalactite, but softer and more resembling analogous appearances on the roofs of old brick or stone arches. This cavern descends very rapidly, but we were soon arrested by its narrowing suddenly to a mere crack, through which however the boy who accompanied us said he had passed, and found that the cavern on the other side becomes more spacious, but his fears would not allow him to investigate further. This part of the passage might be excavated at a trifling expence, which might be fully repaid by the extent, beauty and singularity of appearance which these caverns often present. Dr. Fraser has been spoken to on the subject, from whom more information is shortly expected.

The shore between Murray Bay and St. Paul's Bay is by no means so precipitous as that between the former place and the mouth of the Saguenay, although it gradually retires back into lofty hills, over which, on account of the crowded state of the canoe, Messrs. Bowen and Goldie passed. They describe the road as one continued succession of abrupt rise and fall. Some rocks, the surfaces of which are white, were observed forming much of the shore, but as we did not touch them, it remains doubtful whether they were felspathic or limestone. Beyond these, a black rock, traversed by veins of white calcareous spar, was seen; probably the transition limestone of some authors, and the same as that observed at Murray Bay.

On passing Les-Eboulemens, we looked in vain for the cause of that part of the country being so called ; Isle aux Coudres also, which Charlevoix represents as having been detached from the main by a violent earthquake, exhibits no other character, on passing, to indicate such a catastrophe, than a whirlpool between it and the main, which at low water becomes dangerous for boats, and canoes by the risk they run of being thrown by it on the limestone rocks to the right of the entrance into St. Paul's Bay : appearances indicating some event of the kind are said to be seen, however, in many places on the shore between Port au Persil and St. Paul's Bay, such as the roots and trunks, &c. of prostrate trees, being covered with soil and loose masses of rock.

The limestone mentioned last is of an excellent description ; it occurs in dark compact strata, dipping to the westward at an angle of about 45° . It has all the appearance of being an excellent building material, in great abundance and easily quarried.

At the entrance into St. Paul's Bay, the mountains which form the back ground have a very picturesque appearance, rising in cone-shaped peaks and in alpine ranges ; they are, however, not very elevated.

It is not perhaps generally known that there exists highly respectable evidence of a volcanic eruption having happened somewhere in the interior in the rear of St. Paul's Bay. No one we think will feel disposed to doubt the fact after perusing the following account of it with which, through the politeness of Mr. Gagnon and Mr. Chaperon, we have been furnished. It is the former gentleman who writes :—

“ Au deficit du journal que se trouve écarté, daignez recevoir ce que suit :

“ Samedi, 6 Oct. 1791, à la Baie St. Paul, et autre lieu circonvoisin, vers les sept heures et quart du soir, se fit sentir un fort tremblement de terre : toute la nuit fut troublée par de petits repetés, et entre par un tremoussement courant dans l'est. Les quarante et un jours suivans tremblèrent, depuis deux coups jusqu'à cinq par jour. Le Lundi 8 Oct. fut d'un bon tiers moins fort que le premier (du 5) les autres furent que des petits, ou brouissemens ; le tems toujours obscur. Avant la nuit du 26 au 27, je n'avais pas encore remarqué d'éruption de fumée épaisse, par fois ondoyante de flamme ; la temperature a $7\frac{1}{2}$ heures du soir était à 11° au dessous de zero du thermometre de Reaumur (plus $7\frac{1}{2}$ of Fahr.) et le lendemain au matin à $6\frac{1}{2}$ heures la chaleur se trouve montée à 21° (plus $79\frac{1}{2}$ of Fahr.) Deux montagnes près de ma demeure ouest-quarante quelques degres-nord laissent un passage à la vue entre elles pour laisser voir loin. C'est par cette passe que je vis une continuelle eruption, melée de fumée et de flamme, qui jetoit fort sur l'horizon ; d'autres fois se tourmentaient entre elles comme trop genées dans leur issue. J'ai remarqué plusieurs fois que cette éruption est

presque toujours suivie de tremblement pour le même jour; et quand il manque il s'ensuit un jour obscur et jaune. Quand le tremblement arrive, on peut prédire qu'il va être d'autant plus proche que cette agitation de boucane force pour sortir. Quelques personnes auxquelles j'avais montré ces préparations du tremblement m'ont prevenu a leur tour que dans un moment la terre va trembler, et l'effet le confirma, Ensu cette nuit du 26 au 27 forma un grand spectacle d'admiration, toute l'atmosphère fut en feu, et agitée; la face souffrait de la chaleur, le tems etant fort calme; l'éruption fut continue toute la nuit avec des flammes. L'approche certaine du tremblement se connaît quand par la passe entre les deux montagnes, on voit un nuage, ou boucane, arrêté, ou agité, et qu'à droit et à gauche l'horizon est parfaitement clair."

This description, as far as it extends, agrees so well with the known phenomena of active volcanoes, that little doubt can be entertained of the flame seen by Mr. Gagnon proceeding from any other source than that of an eruption. Mr. Andrew Stuart was aware of the existence of a similar well founded report when he gave us discretionary authority, upon discharging our canoe, to proceed in search of the volcano, provided after having ascertained particulars, there should exist in our judgment any probability of finding it. We were decided to give up the attempt by the following circumstances:—

1. It might lay at a greater distance than could be reached at so late a period in the season, (12th September.)
2. The known fertility of volcanic countries would, in the interval of thirty seven years of inactivity, have caused those parts once ravaged by its eruption, to be covered by a deep and dense mass of both living and dead vegetable matter, concealing all the rocks, and obliterating all the traces of a crater, by which only an extinct or long inactive volcano could be recognized.
3. We were anxious to examine an extensive deposit of magnetic iron which lay up the river in a different direction.

Upon an examination of the greater portion of the rocks we have attempted to describe, a Vulcanist or follower of Hutton, would we think suspect that the country of which they are characteristic had been the theatre of volcanic activity in very ancient times, and upon finding his conjectures supported by the inferential evidence which these *local** earthquakes afford, and that of the more direct and positive description contained in Mr. Gagnon's communication, his doubts on the subject would entirely vanish. For ourselves, being neither Neptunian nor Vulcanist, we leave these interesting but often vague enquiries to those who are better qualified to indulge in them, being satisfied

* They are not felt on the southern shore of the St. Lawrence nor at St. Joachim, to the westward, nor Tadoussac to the eastward.

with the more humble, though not less useful task of describing facts.

Although it is believed that no one but Mr. Gagnon himself saw the flames. &c., many were witnesses to the comparative violence of the earthquakes of 1791. The first is accounted for by saying that there were few settlers at St. Paul's Bay at the time, and fewer whose habits or education would lead them to take notice of a phenomenon which among the vulgar might be supposed to be merely a fire in the woods, had they seen it.

A fall of ashes covering the snow is also within the remembrance of many, but of this interesting fact we have no further particulars. Earthquakes at St. Paul's Bay do not appear to be so frequent nor so sensibly felt as at Malbay.

Three or four leagues up the St. Paul's Bay river, or la Rivière du Gouffre as it is called, there is at the distance of from one hundred yards to two miles from its banks, an extensive deposit of magnetic iron * of which we are able to afford some information from actual inspection.

The river itself is not easily ascended being full of rapids, but the goodness of a road on its right bank renders this inconvenience lighter. Over the road, composed of a sandy alluvium, we proceeded and entered a beautiful valley through which this river circuitously takes its course. The sandy nature of the soil at the mouth of this river opposes little resistance to the action of the current, which when strongest steals upon the shore contiguous, leaving a proportionable space dry on the opposite side, and in this way one proprietor of lands finds himself possessed of the property of his neighbour. When property in this place becomes more valuable, and this natural encroachment more aggravated, it will probably become a subject of litigation. Mr. Chaperon of St. Paul's Bay will soon have to remove two store-houses which the current threatens to undermine.

On advancing, the river retires from the road to the right, and while the former preserves, as is obvious, the lowest level of the valley, the latter pursues a more direct course over a sandy bank. As we passed this bank and cast our eyes on the valley below, we were reminded of the vale of Clwyd in North Wales. It is however neither so wide nor so long. The mountains on each side are tolerably elevated and of course rocky, but the valley is gently undulated land of a fine quality,

* This deposit was known in the time of Charlevoix; for according to that author a miner was engaged by Mr. Talon, the intendent to explore these mines, who reported favourably of them. This man is said to have observed wherever he worked, traces of the earthquake of 1665. We saw nothing of this kind. Previous to our visit to the place, the Surveyor General had brought to Quebec specimens of the ore and information as to its being abundant.

being a mixture of clay, sand and probably carbonate of lime which abounds in the neighbourhood. This valley continues for about six or seven leagues, and is perhaps half a league wide. The road (an excellent one) extends about five and a half leagues up this valley, beyond which a pathway leads to the remotest settlements. There is a cross-valley on the left bank of the river which is said to communicate with the valley of the Malbay river.

The parish of St. Urbain is situated towards the upper end of the valley, and it was here that we stopped to examine the deposit of iron. One bed lays westward of Vincent Tremblay's house on the summit of the hill, and about two miles from the river. Having crossed the valley a distance of about a mile, we came to the foot of the hill which rises at an angle of from 10° to 15° . Here we found large detached masses of this ore, and ascending the hill for about another mile we reached the summit. When we arrived at this place it was found to be characterized by the total absence of trees, and looked like a piece of cleared land of about three or four acres in extent. Near the centre of this, and where the ground began to fall, the ore was seen cropping out of the ground, in one black metallic mass of considerable size. We traced it without excavation for about sixty yards in length, and perhaps three in width, here and there covered by moss or a few shrubs only. The rock with which the ore is associated is a pale syenite; in it the felspar is very predominating, the weathering of which gives a cream colour to the rock externally. That we saw was not solid but in loose angular rotten pieces, and this we found to be the case upon subsequently probing to ascertain the comparative abundance, of the ore as appears from the following satisfactory account of some work Vincent Tremblay had been instructed to perform during our absence on an excursion to the northward.

- No. 1.—Excavated a hole on the north side of the visible iron ore and at about two perches distance, where the same ore was found about two feet below the soil consisting of rotten rock.
- 2.—A second hole was formed on the south side of the visible ore, and about ninety feet distant, here the same ore was again found at the depth of one foot six inches of the same soil.
- 3.—About six yards farther to the south of the last, and at the depth of two feet and a half of rotten rock the same ore was found.
4. North west of the visible ore and about ninety feet distant the same ore was found at the depth of two feet of the same soil.

From this it appears that there is here a considerable supply almost at the surface; indeed we suspect that the whole of the cleared patch before mentioned is occasioned by its immediate presence. We were informed that several places in the neighbourhood were equally abundant in ore, and when about to descend the La Gouffre on our return to St. Paul's Bay, Mr. Bowen discovered a deposit of this mineral which appeared abundant; it is situated in the left bank, about a mile below Vin-

cent Tremblay's house, and about two hundred feet from the waters' edge. Having left instructions with Vincent Tremblay to investigate further, we lately received from him the following information accompanied by specimens.

- No. 5.—“Ces deux morceaux ont été pris sur les terres de Damase Fortin et de Vincent Tremblay, fils, environ douze arpens plus au nord que la mine que vous avez vue et environ quinze arpens plus près de la rivière du Gouffre. Il se trouve un cap continu du même metal et il est parallèle à l'horizon. Il se trouve environ un pied en terre à l'endroit où je l'ai examiné, mais comme c'est dans un endroit où le terrain est pendant, il doit se trouver à une plus grande profondeur à mesure que l'on avance.
- 6.—“ Ce morceau a été pris au nord-est de la rivière du Gouffre, environ dix arpens au-dessus de l'endroit où vous êtes embarqué pour la descendre, et à un arpent de la dite rivière. C'est un cap coupé perpendiculairement de la hauteur d'environ vingt pieds sur une largeur d'environ quarante.
- 7.—“ Ces quatre morceaux ont été pris sur la terre d'Augustin Tremblay au nord est de la rivière du Gouffre vis-à-vis l'endroit où vous êtes embarqué pour la descendre et environ six arpens de la dite rivière. Il sort de la côte un cap de même metal dont j'ai découvert environ trois perches.
- 8.—“ Ces morceaux ont été pris sur la terre d'Antoine Pagé à environ quinze arpens de la rivière du Gouffre, et environ une lieue plus sud que celle que vous avez vue. Il s'en trouve un cap plein.
- 9.—“ Ces morceaux ont été pris entre M^oise Tremblay et Elie Fortin, environ huit arpens plus nord que celle que vous avez vue, et vingt-sept arpens plus près de la rivière du Gouffre. J'ai découvert de ce metal sur environ un demi-arpent carré, mais je crois qu'il y en a un plus grand étendu.”

Before any observations are made upon the foregoing ores, we will here introduce an account of our journey northwards adverted to. The object of this journey was twofold; to see a little more of the interior, and to examine another deposit of magnetic iron. In the first part of our journey we met with tolerable land, although by leaving the valley to our right and ascending the hills we got among the rocks and an inferior soil. These rocks are universally felspathic, and of a cream-coloured external surface. After proceeding about two leagues we came to the rounded brow of a hill which afforded us a beautiful view of a part of the chain of mountains which we had seen on entering the bay, and in which the St. Paul's Bay river has its source. The summits of these mountains were rounded, perfectly bare, whitened and precipitous. We were informed by our guide that after crossing these mountains a wide fertile plain is reached, through which the Malbay river takes its course; he was in the constant habit of crossing this plain with Indian hunters, with whom he was associated. Continuing our route a little further we

came to the flat surface of a rock several yards of which were totally bare and whitened. All we had before seen in our route were so covered up with vegetation, presenting only an angle to the eye, that it was not easy to decide with certainty whether they were in place or not, but here no doubt could exist on the subject. It was one of those tabular masses so common in felspathic rocks, composed of brown felspar, quartz and hornblende; the quartz was very distinct on the weathered surface, from which it projected in grey grains, owing to the greater resistance it opposes to the action of the atmosphere.

Distinct concretions of a very laminar hornblende, possessing polar magnetism, were observed in this rock.

We reached our encampment for the night at the foot of the chain, having passed over in the course of the day much tolerably good land, well watered by small brooks and streams issuing from lakes, along the side of one of which we passed. Rising early in the morning we commenced the ascent of the chain, and on the summit of the lowest part of its ridge, we saw projecting from the side of the mountain iron ore similar to that before seen at St. Urbain, but of a purer quality, though not by any means in such abundance. It here occurs in a visible patch about one foot wide and perhaps three feet long. As it is in solid rock it would not be easily extracted if found upon excavation to form a continuous bed or vein. The rock in which this ore is imbedded is as before a pale syenite, in which the felspar only is very distinct. It is worthy of remark that the extensive deposits of iron ore at Marmora, Upper Canada is, according to Dr. Bigsby, in the immediate neighbourhood, though not in contact with a pale syenite. The metallic blackness of this ore contrasts strongly with the whitened surface of the rock in which it is imbedded.

Knowing that the forests in this country are extremely liable to spontaneous or accidental ignition, the whitened exterior of these rocks is often naturally enough attributed to that cause, particularly as was the case here, where other less questionable traces of fire appear; but weather, acting upon the alkali, which the felspar in these rocks contains, causes an incipient decomposition to take place on their surfaces, by which an imperfect kaolin or porcelain clay is formed, and hence arises this whitened aspect. Fire would certainly assist this decomposition, but from the quantity of iron in these rocks their surfaces would we think be rather reddened than whitened by it. Other deposits of iron ore in these mountains were heard of, but they were not visited, satisfied of its abundance in places more conveniently situated. It may be stated, however, that a Canadian of the name of Baptiste Bridet, gave us on our return to St. Urbain, the following information: Between the pass of the mountains and Lake Bicene, about a league asunder, he observed at short intervals great quantities of iron ore jutting out of the rock; also between Lake Bicene and a place called Le Grand Bris, about ten acres further, he saw the same appearance. Being quez

tioned as to its abundance more particularly, he said that it occurs in veins from six inches to two feet wide and in rounded blotches from six to eight feet thick. The highest mountain in that part of the chain where we were, commands a most beautiful and extensive view of the surrounding country.

We will now give the mineralogical characters of that deposit of ore which we first met with at St. Urbain; after doing which, only a few further remarks on the others will be necessary, as they differ from each other principally by being more or less mixed with impurities. They are almost all of them remarkable for the want of the magnetic character, although possessing the metallic blackness, structure, and other points of agreement with the magnetic oxide of iron to which species they undoubtedly belong.

MINERALOGICAL CHARACTERS OF SPECIMENS.

- Nos. 1 to 4.—Colour, iron black, but break into fragments, the surfaces of which are much tarnished by rust; no particular structure could be observed; some parts were indistinctly laminated, but the general mass appears to be compact granular. The fracture when not effected in the direction of a rusty seam is uneven. They cannot be scratched by the knife, but are easily broken, and do not give fire under the hammer; their powder is quite black; specific gravity about 4.5. Some portion of the ore from this deposit had a vitrified and porous aspect on the surface like cast iron. They are not magnetic before the application of heat. Before the blow-pipe they do not alter in any other respect than by becoming magnetic. With borax they fuse into a glass of either a yellow or very light muddy green colour; upon cooling the colour subsides or nearly so. These ores were associated with a mixture of mica, carbonate of lime or iron, and what was conceived to be epidote.
- 5.—These specimens have a very good appearance, and are more free from foreign substances than some of the others; one of them, however, has coccolite of a yellowish brown colour, disseminated throughout it. Their specific gravity varies from 4. to 4.5.
- 6.—This is the same description of ore as that found by Mr. Bowen, and comes nearly from the same place; it is not quite so good an ore as either of the preceding, being more mixed up with foreign substances, particularly epidote, by which its specific gravity is reduced to 4.
- 7.—These four specimens differ much among themselves, and do not bear the aspect of having been taken from the same place;

one of them has a crystalline structure, and appears to be composed of octohedral grains, while another is earthy and possesses less of the metallic aspect.

8.—Magnetic with polarity; an excellent ore.

9.—This is a very good specimen of bog ore, and valuable if abundant. It probably occurs in greater quantity than has been yet ascertained, as generally where there is a large deposit of rock ore (as the magnetic oxide of iron is called) occupying elevated situations, there is also a deposit of bog ore beneath in the low swampy lands, the latter originating with the former.

It does not appear easy to account for the want of the magnetic character in these ores before they have been exposed to heat. Cleaveland says, that "according to the observations of Werner and Gibbs, this oxide of iron is not magnetic while remaining at a considerable depth below the surface of the earth, but soon acquires this property after exposure to air and light." We must seek other causes to account for the magnetic deficiency in the present instance, as the specimens in question were taken from the surface and possess no more magnetism at the present moment than they did at first. It may be owing to one or more of the following causes; the presence of oxygen above 30 per cent, of sulphur above 40, of carbon, of phosphorus, of arsenic, of manganese and of antimony; of these sulphur, phosphorus, arsenic, manganese and antimony injure the ore, by either rendering it difficultly fusible or its cast-iron brittle, often both. Carbon, on the contrary, improves the quality of the cast-iron, renders the ore more easily fusible and diminishes the consumption of fuel. We cannot say to which of these, or if to any of them is owing the magnetic deficiency, we can only observe that before the blowpipe no fumes of sulphur, arsenic nor of antimony were perceived. From sixty to seventy per cent. of cast iron may be expected from the magnetic ores, and from thirty to forty from the bog ore.

The vicinity of limestone as a flux bestows additional value on these deposits. It is probable that the limestone that was seen at the entrance into St. Paul's Bay may extend thus far. We saw two or three varieties of an excellent description near a small kiln in front of the chapel at St. Urbain, which were said to have been taken from the bank on the opposite or left side of the river; some contained organic remains, while others had more the aspect of a compact marble, and were free from them. We were informed that limestone was also to be seen on the summit of the hill opposite the chapel, where indeed it was ultimately found, but our guide took us first to several felspathose rocks deceived by their whitened surfaces.

Wishing to ascertain the capabilities of the river we descended it in an old wooden canoe. This river may be considered as one continued rapid, though of moderate violence; the only obstacles in which to its

free navigation arise from an accumulation of boulders in several parts of its channel, over which it is difficult to pass without striking. This we did repeatedly, and once or twice were nearly swamped, but more owing to the unskilfulness of our guide than from any other cause; however the inconvenience of a good ducking would have been the only penalty had the canoe actually filled, for the river is in most places shallow. If there were any sufficient object to warrant the expence, such as the establishment by Government of an iron foundry, there is no doubt that the river might be rendered navigable for bateaux by removing only such of the boulders as are most in the way of the channel: for we believe that no rock in place offers any obstacle. To drown these boulders would not be easy, and would occasion a great loss of excellent land, without expensive banks were formed to retain the waters. This river is very circuitous in its course, surprisingly so, considering the rapidity of its current; it owes this character to the alluvial bed it traverses. By it the river is rendered perhaps one-third longer than the road, between St. Urbain's and the bay, so that whatever capabilities might be given to the river, it is probable that all materials for the supply of an establishment, such as we have named above, could be transported over land from the bay, while the articles manufactured would be sent down by the river. Such is the practice at Mr. Bell's well-conducted establishment on the St. Maurice river, up which the returning boats always poll empty. With numerous stoppages we were only five hours descending.

The height of the banks on either side the river varies from one foot to fifty. Rock in place was observed forming the bank in a few places. It was said to be limestone. Our examination of all parts of this river was necessarily hurried, for the expectation we were in every moment of being upset, as we moved rapidly down the stream, would not allow us to improve to the utmost the short period we had to observe at each turn of it. Near the entrance into the bay from the river one small limestone* rock was observed lifting its head above water in mid-channel.

Previously to leaving the bay on our journey into the interior, we had been hospitably received at the house of Mr. Chaperon, and on our return his reception of us was even if possible warmer. But the fear of abusing his civility was an additional motive to depart, which we did the night of our return. Failing in our attempt, however, to reach Quebec by water, on account of contrary winds, we proceeded overland through the *Capes*, which afforded us the opportunity of seeing a country unexpectedly well calculated for settlement, the existence of which a person would have some difficulty in believing who had only seen that

* Specimens of a white granular limestone have been brought to Quebec from St. Paul's Bay, containing threads and seams of a very argentiferous galena. If some of this galena be powdered and dissolved in nitric acid, a bright copper-wire inserted in the solution will after some time be coated with a thick muddy deposit. If this be collected and exposed on charcoal to the blowpipe a bead of pure silver will be obtained.

barren section of it exposed on the northern shore of the St. Lawrence, between Cape Tourment and St. Paul's Bay. It has already attracted some attention and in our opinion deserves much more; for, independently of its own capabilities, it is connected by an uninterrupted broad band of cultivable land, with Quebec on one side and St. Paul's Bay, Malbay and the still broader tracts behind them on the other. A bounty has lately been offered to induce individuals to settle on this land, and a road has been opened, at the expense of the Colonial Government, connecting St. Joachim with St. Paul's Bay. Over this road we passed, and found a good log hut built or building, with a few acres cleared around it, at every league or thereabout. The land through which the road runs is always tolerably good, in many places excellent, and it is intersected frequently by small rivers and streams, favouring its drainage, the want of which many portions of the road attest, particularly towards St. Joachim.

This road possesses two excellent characters; it is remarkably straight and remarkably level; for, excepting at the two extremities of it, St. Paul's Bay and St. Joachim, at the former where it passes over limestone, and at the latter granite, we do not remember any other rise of any consequence. The first part of the road is over the same alluvial deposit, through which the river du Gouffre passes, and which continues in one level plain to the foot of the limestone ridge. On ascending this the soil becomes more sandy, but it soon after improves and is then a mixture of clay, sand and iron, to the latter of which it owes the yellow or red colour it sometimes possesses. The road is excellent for a distance of four leagues; it then becomes very boggy and in some places quite impassable for carts. It is only, in such places, by sinking up to the knees in a stinking mass of mud, loaded with carburetted hydrogen, that the pedestrian is able to proceed. This character, which continues more or less to the foot of Cape Tourment, is owing to the retentive nature of the soil, and its nearly horizontal position. In a short time the money which has been expended on the road will have been uselessly employed without an additional sum be advanced, to prevent it from being completely broken up.

There was nothing remarkable in the quality of the timber which consisted principally of white birch until we reached the ridge separating St. Joachim from the Cape lands, where we met with some of the finest description that had been seen during the whole journey, among which were some well-grown elms. The granite of Cape Tourment is known to be the depository of large pieces of brown mica, which are dug out the size of the foot from crevices in the rock; some of it is exceedingly contorted. The rarity of mica in most of the rocks described in this essay renders this deposit the more deserving of attention.

Having closed our geognostical observations at the foot of Cape Tourment, we will now introduce a short recapitulation by way of sum-

mary which will include some remarks on the geological position of the rocks we have described. The rocks seen on our journey were the following :—

- Nos. 1.—Granite.
- 2.—Micaceous Schist, (Mica Slate.)
- 3.—Quartz rock.
- 4.—Primary limestone ?
- 5.—Syenites—including syenitic granite and syenitic gneiss.
- 6.—Trap rocks—or aggregates, in which hornblende predominates
- 7.—Felspar rock—(sui generis.)
- 8.—Magnetic iron.
- 9.—Clay-slate.
- 10.—Grey wacke.
- 11.—Sandstone.
- 12.—Secondary limestone—including the transition of some authors

Of all the granitic rocks we met with, perhaps that of Cape Tourment is the only one, free from an admixture of hornblende; for although we collected some specimens elsewhere, which appeared to be so, it might very well have been present, without our being able to detect it, on account of the smallness of the grain of those specimens, and the resemblance of the hornblende to mica, which latter circumstance may indeed have occasioned one mineral to have been mistaken for the other. We cannot positively assert that the granite of Cape Tourment is free from hornblende, but we think so.

Micaceous schist was met with only at Mal-bay, where it has been already described as dipping to the west, having black fetid limestone above it, and quartz rock and syenitic gneiss below. It is here that the three classes of rocks (admitting the transition to be one) are seen together, and the geologist derives from their inspection assistance in his subsequent researches in the neighbourhood. Micaceous schist being in all cases a primary rock, the syenitic gneiss below it, must also be primary, which it appears necessary to establish, because the same rock was not found elsewhere, to be associated with a similar proof of its superior antiquity; rocks in which hornblende and felspar abound, being common to the "overlying class" of Maculloch, with which many of the rocks in the Saguenay and elsewhere, have other points of agreement besides mere mineralogical identity.

The syenites and traps are the only rocks met with from the mouth of the Saguenay to the falls on La Belle Rivière, and they are likewise most characteristic of the north shore of the St. Lawrence, from Tadou-sac to Cape Tourment. Mr. Nixon met with syenite on David's River, a branch of the Perebonea, and with trap at the falls of Ouitchouan.

A pale syenite is the predominating rock in rear of St. Paul's Bay; with this no trap is associated, and it is the deposit of extensive beds of magnetic iron, all of which is in favor of its primary character; it possesses no traces of stratification.

Quartz rock was seen only at Mal-bay, underlying micaceous schist, and between it and syenitic gneiss.

Primary limestone? associated with syenite gneiss and trap, occurs at Monlin à Baude. A loose mass of a similar description was found on the shore of lake St. John, near and to the westward of the Post of Mitabitshuan: it was angular and of an untravelled aspect.

The felspar rock (*sui generis*) alluded to, is one, many of those characters resemble those of Labrador felspar from which it differs principally by its want of iridescence. It forms the north eastern shore of Lake St. John, and its islands from the mouth of La Grande Décharge, to within a mile of the Koucouthime river, and was met with by Mr. Nixon in La Petite Décharge; also uninterruptedly forming a rocky bank from the foot of the first rapid in the Peribonea river, to the great falls on the same. We can say nothing of its rock associations, as they were not seen. It will probably fall under the general term syenite, although hornblende is a very rare ingredient in it.

Magnetic iron occurs in such extensive beds in rear of St. Paul's Bay, as to entitle it to be considered as a rock. It was met with in abundance in no other place.

Clay-slate, in association with grey wacke, was met with on the Island of Orleans, both are well known to be very abundant in Lower-Canada, particularly in the neighbourhood of Quebec, and from thence towards the mouth of the St. Lawrence, but they are principally confined to the southern side of the river. Clay-slate was also met with on Lake St. John, for we still persist in calling by that name the rock we met with there, apparently alternating with fetid limestone.

Sandstone was met with only at Mal-bay, underlying horizontal limestone. The position of this sandstone answers to that of the old red sandstone, which, if it be, it is another instance among many of the absurdity of affixing such a name to a rock, which in the present instance is of a light greenish colour.

Secondary limestones, among which, for convenience, we include, after the example of MacCulloch, the transition class, were found at Mal-bay, St. Paul's Bay and Lake St. John. The fetid limestone which overlies micaceous schist at St. Paul's Bay, we have conjectured to be a transition rock. On Lake St. John, secondary limestone of the carboniferous order, forms, with clay-slate, the southwest portion of the shore

of the lake, from Pointe Blue to within three miles of the Post of Metabitsshuan.*

It has been before said, that no appearance of the operation of a violent deluge was observed; on the contrary all the soils, in many places very deep, consisting of clays, marly clays and sand, were generally composed of the finest particles, without the trace of a boulder or even a pebble. The surface of the land was so far free from them, that we do not remember to have seen one that was waterworn, and evidently a travelled fragment, the position of which did not point directly to the route by which it came. It must not be omitted to mention, however, that with the exception of the several portages, our observations were confined to the shores of the rivers and lakes, which were met with in the Saguenay Country.

With the exception of those entering among the constituents of the rocks we met with, minerals were rarely seen. We did expect particularly to have found some of the numerous family of zeolites, tenants as usual of amigdoloidal trap; but neither of these nor of that rock, were any traces perceived; the pores of the vesicular syenites that were occasionally observed, being entirely empty. The following are the names of the few minerals we met with.

Calcareous Spar—Principally in the fetid limestone on lake St. John, and more particularly filling original cavities in its fossil organic remains.—The only instance of its being associated with trap, was the one stated while describing the rocks on the Saguenay.

Epidote ? (earthy)—Apparently entering into the composition of some of the syenites in the Saguenay. Also associated in some abundance with magnetic iron in St. Paul's Bay.

Augite ? probably enters into the composition of some of the traps, but it is not easy to distinguish it from hornblende.

Coccolite—Disseminated through magnetic iron, in rear of St. Paul's Bay.

* Sir Alexander McKenzie states that the narrowest part of Lake Winipic is not more than two miles broad, at which place the west side is faced with rocks of nearly horizontal limestone about thirty feet high, while the east side is more elevated, and is composed of a dark grey granite. Immediately afterwards, he observes, that all the great lakes of the country are to be found between these extensive ranges of granite and limestone. Keating appears to think it probable that the excavation of this lake was occasioned by the easier decomposition of the strata at the junction of the two formations. It is certainly deserving of attention that the Lakes, Slave, Bear, Arthabasca, Winipic, Superior, Huron, Ontario, St. John and Mistassiny, have large deposits of secondary limestone on their shores, whilst some portion of these lakes is either granitic, syenitic or trap-pose. The limestone of Lake St. John must be either isolated or connected with the same formation at St. Pauls or Murray Bay. A considerable degree of probability is given to the latter conjecture, by the existence of a fine level country at the back of these settlements.

Garnet (common)—Forming distinct nodules in micaceous schist at Mal-Bay ; the beautiful foliated variety of precious garnet, known to occur here, was not seen.

Magnetic Iron—In extensive beds in rear of St. Paul's Bay. Also forming veins and small distinct concretions in the syenites, and disseminated in small grains through some of the traps of the country we traversed.

Green Carbonate of Copper?—In small traces among some of the syenites we met with.

It must be obvious to those instructed on the subject, that an individual rapidly traversing a country, will acquire a knowledge of its geognostical features more readily than he can hope to obtain of its mineralogy, because rocks, unlike minerals, occupy large spaces, and a specimen struck from one place is characteristic of many others ; but minerals, with the exception of those which enter among the constituents of rocks, are very partially deposited, and either chance favors the hasty tourist, or they must be very abundant in the places he seeks them, if many be met with.

Passing Cap Pillard, near St. Joachim, Mr. Nixon observed a vein of a green and white substance from three to six inches in thickness traversing the rock. Upon landing, specimens were procured, which being examined subsequently, were found to be mixtures of carbonate of lime, under the form of calcareous spar, and a variety of fluato of lime, denominated chlorophane, the characters of which are given below. The rock it was associated with, has not been examined.

Colour.—A lively light green.

Translucency.—Deeply translucent on the edges.

Structure.—Laminar, sometimes indistinctly so, approaching compact ; intimately associated with calcareous spar.

Lustre.—Dull, or none.

Hardness.—About that of fluor.

Powder.—Whitish green, and rough.

Specific Gravity.—3.0.

Effect in Acid.—Throws out a few bubbles, owing probably to the calcareous spar it is associated with ; *when sulphuric acid is poured upon it, in a state of powder, it gives out white fumes which corrode glass.*

Phosphorescence.—Placed on a heated poker it phosphoresces in a dark room with a beautiful green and purple colour. In boiling water it emits a palish light. This phosphorescence was observed after the mineral had been exposed to acid.

Effect of the Blowpipe.—When exposed to its exterior flame it *does not decrepitate*, but phosphoresces with a beautiful blue colour, like the interior flame of the blowpipe, and becomes white. When exposed to the interior flame it forms a white dull enamel.

EXTRACTS from the Journal of an Exploring Voyage from Quebec to Lake St. John, around the said Lake and thence back to Quebec, kept (by Mr. Nixon, 66th Regt.) containing such parts of the said Journal as relate to the quality of the soil, the capability of settlements and other objects immediately connected with the Mission, whereof Mr. Nixon formed a part.

AT Tadousac, a chapel, the clerks' house, forge and two stores, together with six huts or barns, form the post, six adults generally reside there; I saw a very fine English bull, two cows, the same number of calves, seven sheep and one horse; for their winter food, hay is brought from La Petite Rivière et Grande Rivière Bergeronne, the former three and the latter three and a half leagues from Tadousac: from Mr. Wagner's account, the former produces a most valuable supply of excellent wild hay for the post, and is capable of producing much more than is at present made; very little is obtained from the latter place, and both are difficult of access. In the harbour of Tadousac, there is a stream of excellent water.

On the left bank of the river Saguenay is a large projecting rock, called La Boule, three miles distant, as is reported, from Tadousac. The banks on each side of this part of the river, are amazingly steep, falling almost perpendicular into the river.

One of the clerks of the post gave me the following information: "The navigation of the river Ste. Marguerite is very rough, accessible only by small canoes, the land on each side covered by various species of timber, which becomes hard wood the higher it is ascended. Ash and a little maple make their appearance now and then. There are occasional patches of good land, running up the distance of twenty miles, interrupted by mountains. The course of the river is the same as that of the Saguenay. The depth of these patches of good land are from three to five acres. The nearest place of cultivable lands is at the *Déscente des femmes*, eleven leagues from river Ste. Marguerite, the extent is about sixty acres upon the river, running back on an ascent of land for two miles. He has not examined the land, but judges from the appearance of the wood. There is a small stream apparently not navigable for canoes. About two or three leagues above this point, the next good land appears continuing up to Checoutimi, it extends

back, from what he heard, a good distance. The first good land on the south shore of the Saguenay, after leaving Tadousac, is the river St. John, distance nine leagues, good ground for about one mile square and is equally divided by the river : after this, Trinity Bay, where he conjectures the quantity of good land to be the same as at the last mentioned place. This is twelve leagues from Tadousac, five leagues further up the river, brings you to the commencement of the Ha Ha bay, where the good ground is interrupted occasionally by mountains, running down to the shore : the next piece is within three or four miles of Checoutimi, running back beyond the reach of the eye, and there is also an extensive meadow. The Port of Tadousac is always open, vessels have come in during the month of March, and found it perfectly clear of floating ice ; last year the Saguenay was frozen only as far down as the river Ste. Marguerite, as he was informed by the servants of the post at Checoutimi, who came down there the latter end of March. He, himself was at the little Saguenay, a league higher up than the Ste. Marguerite, about the 13th of April last, when there was no ice lower down than that river."

Nearly opposite La Boule, the banks of the Saguenay assume the appearance of a ruined castle, the timber destroyed by fire. On the left side of La Boule is a deep gully, apparently dividing it from the main land.

At the back of our encampment, was a most remarkable perpendicular high rock, running nearly N. E. and S. W. and is a continuation of La Boule, composed of granite and gneiss, with hornblende schist, interstratified. Mr. Baddely, on the shore there, knocked off a specimen of magnetic iron ore from a detached rock. There is sufficient vegetable earth round this encampment, to raise grass for pasture or meadow, to supply Tadousac. Mr. Brownson has sown a small patch of timothy at that post, which has succeeded.

Pointe Passe Pierre is one league distant on the same side of the river of our resting place of last night. At the Bay des Petites isles de Passe Pierre, is a cabin, on the main land, this is the first fishing place of the King's Posts : where is likewise a small river unfit for canoes from the rapids, it is very narrow, being only from 100 to 150 feet wide.

There is a great difference between the waters that run close to the shore, and those of the centre, the former being comparatively tranquil when there is a great swell in mid channel. We arrived in the bay of St. Etienne, distant four leagues from Tadousac, at twelve, where there is a small river running into it, a good harbour and anchorage. The harbour is much larger than that of Tadousac, and is protected from all winds, except the east and N. E. ; round this bay, is a small tract of alluvial land, white birch and poplar appear but on the west side of the bay.

The King's Post company have a fishery in Ste. Marguerite's river, in which five or six hundred salmon are caught in a good season: they have a hut and hungard there. In the Anse au foïn is a small river and plotch of good land. The Ste. Marguerite's river is navigable for canoes, the distance of 20 or 30 miles, it is about an acre broad on an average, and at its mouth about two. It is one of the principal hunting seats of the Indians. The first of the St. Lewis' islands we reached, was covered with fir, poplar, white birch and some spruce, these islands are six leagues from Tadousac. We honored the prominent points on the right bank of the river opposite the St. Lewis' islands, with the names of Victoria and George, and one nearest the smallest of the islands Cape Andrew.

Point Comfort Bay is exactly opposite St. John's, having on its right Point Comfort; it has a sandy beach, a water fall on the right, the timber round it principally red pine.

Ste. Marguerite river, in point of size, is the largest that flows into the Saguenay, next to it St. John's, and then follows La Trinité, resembling the little Saguenay, which ranks next in order. The little Saguenay runs further into the interior, branching off towards Mal-Bay, and is much frequented by the Indians as a hunting ground.

In Half-Way Bay, exactly opposite Trinity Bay, on the left, is a fine water-fall of fresh water. In the Bay des descente des Femmes, Mr. Wagner went over the heights, and discovered a considerable quantity of red pine, sufficient to indicate, that in different parts of the neighbourhood, timber of that description was to be found of value: he met likewise with some patches of hard wood, such as are found on good lands, the small quantity of low land appeared fit to answer agricultural purposes. Past Cape à l'Est, at half past three, and then came in sight of the Bay de Ha Ha, which certainly is the most magnificent bay I ever saw, running from Cap à l'Est, into the shore of the bay, three leagues. After doubling Cap à l'Est, we stretched across to the southern shore of the Saguenay, and put up for the night in Bear's Cove.

About 6, A. M. reached Rocky Bay, from the great number of rocks that shew themselves above the water, and arrived at Chicoutimi at two.

Chicoutimi is the chief post of the Company, it being the depot of the interior, there is a small chapel, built by the Jesuits, one hundred and two years ago. The ground about it is very excellent, having the appearance of being composed of great abundance of rich marl. mixed with excellent soil and sand. Mr. Andrews, the clerk of the post, who has resided here six years, has two good patches of potatoes, looking remarkably well, and a bed of cucumbers—last year he cultivated melons in the open air. Every thing that grows in Montreal will here.

He informs me that were he to settle on a farm in the Saguenay, he would rather do so exactly opposite to the Post on the northern shore or else a quarter of a mile above on the southern. On a question being put by Mr. Wagner he replied, that were a man employed alone on the care of the garden, no garden round Montreal could equal it in produce. In May, in spring tides, the water rises here sixteen feet.

Aug. 19.—Left Chicoutimi and embarked at eleven. The river as far as Lake Kenwangomi or Tznogomishish is called the Chicoutimi, and in which are seven portages; the timber bordering it consisting of red and white spruce, poplar and black birch. Between the portages of Chicoutimi and Maie, and between Maie and Attim the country is flat and well timbered, and appears well adapted for cultivation; timber, white and black birch, poplar, pine and spruce. On digging in the Portage des Chiens (Attim) the general face of the soil was found for a depth of five inches of vegetable mould upon a stratum of about the same depth of sand; and in another place a sand mixed with loam apparently of a more fertile nature. I dug up the ground in three different places in the Portage de l'Enfant; it appeared to be of a very fertile quality, consisting of a rich black loam intermixed with a dark sand. The country, as far as the eye could reach, seemed highly favourable for settling; no hill to be seen; the timber of the same description as already mentioned. Between the Portage de l'Islet and Portage des Roches the land is very fine; at the end of the last portage we launched into Lake Kenwangomi (Long Lake.) This lake abounds in beautiful scenery, in fine bays, and is well timbered; there are three islands covered with small willows, they would make excellent meadows when cleared. One of our party shot a fine white rabbit at Pointe aux Sables, with red eyes, small transparent ears, and remarkably small head.

Aug. 21.—At the end of the lake, which is about six leagues in length, we entered thro' a narrow and short channel, Lake Weque; this channel is in general perfectly dry, forming a portage between the two; at the end of it is the Portage de Kenwangomi, or Weque Caputtigan, at least a mile long, particularly well timbered; to it Mr. Wagner gave the name of Isle de Formosa, or Bell's Isle, it is the height of land between Lakes Kenwangomi and Kenwangomishish, the former emptying itself into the River Saguenay by the Chicoutimi; the latter by the River des Aunes into Lake St. John. On digging in several places we found about four inches of vegetable mould on a bed of rich marl and clay. At the end of this portage is Lake Kenwangomishish (the lesser Long Lake), half way over which on our left we entered Lake Kasuskikeomi (the lake of clear water) called by the Canadians Lac Vert, it appeared to be long: the point of junction between the two is called Apelogomah.

X The whole of the land in Lake Kenwangomishish near the water is covered with ash and elm; from this lake we entered Rivière des Aunes or Pashi Kasninanishchi-zebe (the Alder river); at the commencement

of which the rushes and flags are very fine, from eight to twelve feet long. The land appeared good but low; from the river we fell into one called La Belle Rivière, which flows into the lake. The view as you enter the lake is splendid, and not seeing the opposite shore adds to the effect. We coasted the shore of the lake for four leagues to the Post at the mouth of the River Metabitsshuan, Lat. $48^{\circ} .23' 12''$, (the place where the course of the water ends), leaving on our left the small river Knoshpygish, where is a small ascent and a grove of maple, where the sugar for the post is made.

Aug. 23.—Formerly the Jesuits had three hundred acres of land cleared, of which there is now only from ten to fifteen at the utmost under cultivation, the rest is fast returning into its original state. In the garden are now growing cabbages, carrots, peas, French and kidney beans, onions, potatoes, pumpkins, indian corn, cucumbers, wheat and barley, together with beet-roots and turnips. Two plum trees were pointed out as those planted by the Jesuits, as likewise some garden currant trees. The residents at this post are the clerk, Mr. Murdoch, two men, a woman and three children, the live-stock a bull, cow and heifer; four buildings, dwelling house, hangard, bakehouse and stable, form the post.

Jacob Duchesne stated, "that the climate here is much superior to that of Chicoutimi, perhaps a difference of twenty days in general; he has lived here four summers and three winters; every autumn the tops of the potatoes are frosted from twenty to twenty-five days earlier at Chicoutimi than at this post. It is now twelve days since the barley was cut, it was sown about the third of May, the wheat between the seventh and tenth. He was engaged in farming operations till the age of sixteen at Malbay. He further stated that they can sow ten days earlier here than at Malbay."

Aug. 24.—During our progress to overtake Messrs, Baddely and Hamel this day, Jacob Duchesne continued his information. "That he himself has not visited the Peninsula, but the Indians say that it is in general a level fine country, as you get towards the end of the Lake Kenwagomi, and at the foot of the rapids there are some mountains which are not very high. The year before last the old chief Thomas, who was deprived of his rank by the Company for some offence in trading, going in the latter end of December from Lake St. John to Chicoutimi with his family, stopped at the Bay of Cushkouia on Kenwagomi, the ice not having taken lower down, and their not being sufficient snow to walk on snow shoes. He went from that place to Chicoutimi with his two sons, and returned to the Bay of Cushkouia, each of them carrying a sack of flour, and performed the journey as he was informed, going and returning, in five days, and said it was easy travelling. The present chief, Simeon, is a very great traveller: he will leave the mouth of the Grande Decharge in the morning on snow shoes, travelling on the ice, and reach Chicoutimi at four o'clock in the evening of the same day. The usual

route is by La Belle Rivière and the Lakes ; it takes them three of the short winter days. Another winter route is the following : to strike off across the island about three quarters of a league from the mouth of La Belle Rivière and come out at the Point du Sable (Opowoka), which is about five leagues of country quite level and very well wooded. Besides the main Decharge of Lake Kenwangomi; there is another commencing a short distance from the Pointe aux Sables and emptying itself into the Grande Decharge more than half way down its course. He has been informed by Mr. Verrault that before reaching the Grande Decharge it passes under a mountain and re-appears on the opposite side. This stream is navigable for canoes in the spring but not in the summer. On entering the bay of Cushkouia, at the distance of ten or fifteen arpents, you reach a small lake, the water of which, after a course of five leagues, empties into Lake Kenwangomishish at the upper part of that lake near the Portage. Last winter two indians, Simeon and Nicholas were hunting the caribou and beaver in the Presqu'isle, on their return told him they had been down as low as Cushkouia, had met with no lakes but many small streams. Last winter he went a days' march from the Post taking a S. E. course, crossing Knospygish, travelling a distance of eight or ten leagues and returned the next day ; the country was level, the timber consisted of birch, ash and maple, the country beyond it resembling other parts in the neighbourhood of the Post Lake St. John, which have the appearance of mountains at a distance, but when upon them are gentle swells of land, table land, and valleys with different exposures. There is a sugary, one and a half league from the Post on its right, which can produce seven cwt. of excellent sugar on an average annually."

The whole shore of Lake St. John (Peaguawgommi, the low shallow lake) as far as Koucatimzebi (the dog owl river) Lat. 48° - 37' 59" is a sandy beach of the depth of from half an acre to two acres. I ascended a considerably high sandy hill this morning, and from it had a good view of the country in the interior which improved in appearance ; this opinion has been backed by the accounts of Messrs. Hamel and Baddeley.

Aug. 26.—Mr. Baddeley having, at the request of Mr. Stuart, joined Mr. Wagner's party, Mr. Hamel and myself, after wishing them all a bon voyage, at half past ten, A. M. ascended the river Kouacatim, the timber on each side of which was poplar, white birch, ash, spruce and elm ; after overcoming several impediments from fallen trees, we succeeded in getting up half a league, when Mr. Hamel thought it useless to ascend any further, we each landed on separate banks and went into the bush about a mile, found the soil sandy. My party came to a swamp, crossed over it, and reached a large rock the boundary of our walk, the timber consisted of white spruce, fir and poplar. On my return to the canoe I found Mr. Hamel had met with the same description of ground : the land on each side of this river, as far as we ascended and could see, appeared flat. On the land from Kouacatim to the mouth of

the Peribonea river (the curious river) the timber is in general black spruce, a few poplars, cypress, white birch and pine; the land itself low and swampy, from the waters in spring overflowing the sand banks and remaining in the hollows and becoming stagnant.

Aug. 27.—John Young, one of our voyageurs, has been eighteen months in the employ of the Post at Chicoutimi: this spring, in company with another man, he went to the bay de Ha ha, (signifying prospect opening) and penetrated the woods for about a league and found the ground good; he tells me there are three rivers which fall into the bay at nearly the same spot, also opposite to the post of Chicoutimi there is an old road of about nine miles long, there are no hills, but there is a swamp for about half a league, after which the ground is good; the timber white birch, cedar and spruce.

Aug. 29.—Arrived at half past twelve at the mouth of Musk Rat river, and at half past three the River Peribonea, lat. $48^{\circ} - 42'' - 37'$. We ascended it one-and-twenty miles, during which we had to traverse three portages, of the last two miles the Lake Noh-oui-loo was formed; in general the soil proved to be good. On the right bank of the lake we ascended Rum River, the timber white birch, red and white spruce, and a few pine, the banks low and covered with franc foin in great abundance.

Sept. 7.—Opposite the mouth of Musk Rat river we entered one to the north-west to which we gave the name of David in honor of Mr. David Stuart, one of the Commissioners, and followed the course of it for eight miles and a half, where we were stopped by rapids and a portage. After coasting the shore of the lake, from the mouth of the River Peribonea for about seven miles we entered the River Mistassini, lat. $48^{\circ} - 38'' - 55'$, having on our right a large cluster of islands to which I gave the name of my very excellent and real friend, Thomas Leigh Goldie. We ascended the Mistassini for nine miles; it is beautiful in its width, islands and woods, but wretchedly bad in its soil, being all sand on both sides, and its waters extremely shallow.

Sept. 10.—We crossed over to the Isle aux Coulevres, Manitou-Ministuki (the Evil Spirit's island) with a bottle for the purpose of preserving one of the snakes, but after a minute search did not even see the generally shed in spring. There is another island not far from this called Grosse Isle, and between the two a high yellow sand bank with a solitary tree or two on it. If there are snakes on Manitou-Ministuki, the only reason I can give for not meeting with any is that the sun having nearly reached the horizon they had crept into their holes for the night.

Sept. 11.—Our progress this day was not great, reaching only the mouth of the River Ouiguatshouan, (Do you see the Falls there?) as I wished to take a sketch of the falls, having observed them on the opposite side of the Lake, and from Mr. Hamel having taken three dif-

ferent intersections on them. After a great deal of difficulty and fatigue, ascending and descending hills of no inconsiderable height, we reached their foot, unfortunately on the wrong side to see them from the commencement of their fall. However, we soon forgot our fatigues in admiring the beauty of these falls, which rival Montmorency in height and surpass it far by the distribution of its water over the pending rocks in its descent. The fall is about a mile from the mouth of the river, during which distance no smooth water is to be met with, being one continued rapid; I am told higher up than the great fall at the commencement of the portage there is another nearly one hundred feet high.

Sept. 13.—The fishing season for white fish commences at the mouth of the Ouiguatshouan, about 15th October; last year in one day they caught 300, and in the whole season 1700 and upwards; they were preserved by freezing and subsisted the people of the post and Indians till spring; each fish on an average weighing from one and a half to two pounds. The season for the awenanish is from the 15th May to about the 20th, or latter end of June, they are chiefly taken with the hook, and weigh from two to three pounds.

I obtained the following information from Mr. Murdoch, Clerk at the Post:—

“ I do not think that more than ten sail can ride in safety in the harbour of Tadousac; at low water a ship can be brought close in shore, for it descends at once. At spring tides the bank is quite dry, the water rises at the highest eighteen feet in spring and fall tides, but commonly twelve in the summer. In the l'Ance à Catharine there is a distance of three quarters of a league, formed by the point or Battures aux Allouettes and the point of the Saguenay; this forms St. Catharine's Cove, and in it from two to thirty fathom water. Thirty sail can ride in safety from the westerly winds; one-third of the tide out there runs in a pretty tolerable swell with a south-east wind. The reef of rocks that project from Point au Bouleau runs about two miles out and forms a kind of half moon open to the eastward. In spring-tides these rocks are entirely covered, but there is always a surf about them; at the end of these rocks there is a small sandy island never covered by water, this and the rocks are called Pointe et Battures aux Allouettes. Ships of the line can sail up as far as Rocky Point, which is four leagues from Chicoutimi; at low water they can beat up, although the wind may be contrary, having the flood in their favour, but there are only two places of anchorage for them, between St. Catharine and Rocky Point and St. John's Bay and St. Marguerite; the former six, the latter five leagues from Tadousac. There are many harbours for schooners from sixty to eighty tons, and they can carry their fastenings ashore should they not find anchorage. Vessels of eighty tons can sail up at high water and anchor close to the Big Rock at Chicoutimi; they must tide it up from Pointe aux Roches, owing to the rapids and shoals of that part of the river. The harbour for vessels at Chicoutimi is to the westward of the Big Rock, opposite

to the landing place; they can drop their anchors and haul the vessels dry ashore. From St. Marguerite upwards the current of the flood is hardly sensible in high waters in spring and fall. The tide runs up to the foot of the falls of Terres Rompues which is about two leagues further than Chicoutimi; it rises about fifteen feet. The Big Rock is at least twelve feet high, and I have seen the waters three feet above it. I reckon the distance from the House at Chicoutimi to the Post of Lake St. John, canoe route, from twenty-three to twenty-five leagues, and consider the land very good between these two places, excepting the west side of Lake Kenwangomi, which is uneven and rocky; the prevalent timber, fir, spruce, poplar, elm, a good deal of ash, a small quantity of red pine, and scarcely any white—white birch abounding most; a considerable quantity of black or canoe birch, and some scattered maples and cedar are to be met with all along; scarcely any cypress until you arrive at Koushpigan (a place which is ascended). The fish abounding between Chicoutimi and Koushpigan are, red trout, watouche or chub-pike, carp and doré, the two last to be found only as far as the falls of La Belle Rivière: the red trout only to be met with in Lake Kenwangomi and the Portage de l'Islet, and a few in Lakes Weque and Kenwangomish,—chub and carp are in great abundance in the two latter lakes. By report I have heard that there are smelts in Lac Vert, but I have never seen any myself. I think a vessel of sixty tons can sail in Lake Kenwangomi, having every reason to suppose the water to be very deep in the centre and west side of it. Lake St. John is navigable for a flat-bottom built vessel of from thirty to fifty tons. The fish most abounding are, pike, carp, doré, white-fish, awenanish, chub, and a fish called la munie, resembling the eel in colour, the dog-fish in shape, and cod-fish in the head, but much flatter, the average length two feet and a half; the Indians are very fond of it boiled, but the white people make no use of it except the liver, which is considered a delicacy; it is also used for bait during the winter season. I consider the awenanish the best fresh water fish I have ever met with. Lake St. John is much exposed to the north-west and south-west winds, when a heavy swell runs to the opposite bank. I have seen the lake in the fall of the year in such a state that there would be considerable danger in crossing, indeed almost impossible to do it on account of the broken swells. Under the lee of the land there is no sea for some distance off, according to the point from whence the wind blows; I have seen it one sheet of foam.

†
 “ There is a difference in the climate of from fifteen to twenty days between Chicoutimi and Post Lake St. John. I left Chicoutimi last fall about the 23d September, where the potatoe stocks were all frost-bitten, as also all the cabbages and onions, and arrived at Post Lake St. John on the 25th found my potatoes still in blossom; they remained so until about the 12th October, when I dug them up. I conceive this great difference is owing to the low situation of the ground, and the vicinity to salt water at Chicoutimi. Every thing will grow here (Lake St. John) that does in the neighbourhood of Quebec, and even melons; as for the latter I had them, but the worms destroyed the young plants.

The ice of the lake is not passable in safety before 10th of January; the first appearance of its forming on the lake is about the 10th November, and begins to form all over about the beginning of January; but in consequence of the prevalent winds is not passable at that time: the first frost last year was on the 17th of October. The lake is navigable all round but not in the centre, about latter end of April, and all over by the 8th or 12th of May. The ground will be in a state of cultivation before the lake is clear; and free from frost at least one foot deep by the first of May, at which period peas were put in the ground this last season. I sowed ten gallons, and gathered better than ten bushels; owing to the wetness of the season about one-third of the crop was lost; they were fit to be taken up on the 1st Sept. The women in cleaning peas for soup collected not quite half a pint of wheat, which as an experiment I sowed about 7th May, cut it down on 8th September, and found it produced a good half Winchester bushel. Mr. Wagner took at hazard two of the ears of wheat, and counted the grains on one 41, on the other 46. The stocks grew about four feet high. On the third or fourth of May I sowed half a bushel of barley, which produced on being reaped, &c. on the 5th of August between five and six bushels. A pint of Indian corn sown on the 10th of May has given me at least ten gallons, a great quantity has been destroyed by worms: all the grain was sowed without manure. I commenced planting my potatoes on the 10th and finished on the 13th May about eight bushels which I have as yet not dug up. Last year about the same time, not quite the same quantity in heaps returned three hundred bushels; in heaps there is not so much seed required as in ridges, this year the potatoes are in ridges; the year itself has been very unfavourable for crops in general.

“ The Seigniory of Port-neuf and Milles Vaches Bay are excellent lands; hay can be cut in the latter for at least one thousand head of cattle, it would be very advantageous to settlers as fodder for their cattle at their first commencing to clear the bush: the land in fact is cleared naturally all around the bay, the timber of a good growth, white pine and spruce. The country on the east side of the bay is level for a considerable distance, at least for nine leagues, and there is a stream of water in the bottom of the bay that will admit of building a mill of six saws and also a grist mill; the bay is very accessible to small craft. Port-neuf Post has an excellent harbour, but it is only to be entered at high water by small craft; the soil is as good as that of Milles-Vaches, but it is on higher ground and the timber inferior. The two seigniories are contiguous, and form together six leagues in front by four in depth. There is a river running close by the house forming the harbour, and it is sheltered to the southward by a high bank of sand which is not covered at high water.

Sept. 14.—At the mouth of the Petite Decharge (Cushpetunish) Mr. Hamel struck across the island, whilst John Young and I went down the side of the rapids on the rocks to what we imagine the meeting of the two discharges which join at a very short distance from the

mouth of the Petite Decharge; they there form a small lake, the size of Weque at the west end of Lake Kenwongomi. On our return to the canoe, we took a straight course through the bush, found it rocky in almost every part; the timber, pine, epinette, cedar, very small, and some white birch. The island is small, being about the size of the others lying in the mouths of the two discharges, the distance between the extreme points of which is about four miles. All the islands of this part of the lake are rocky, the timber on them is of a mixed description. In fact, the division between the two discharges is a collection of small islands; the whole group occupies a space of about five miles in length; they were honored by Messrs. Baddeley and Hamel in being called the Dalhousie islands.

Sept. 15.—On our return to Chicoutimi we entered a lake on the left of Kenwongomishish, to which Mr. Hamel did me the honor of giving it my name; the country round it level and soil good; timber, fir, black birch, a few white, and some spruce, elm and ash. Entered Prisoners Bay on our left, in Lake Kenwongomi, at half-past three, ascended River Baddeley seven miles, terminating in Lake Young. White black and grey birch, fir and alder on the different shores was the prevalent timber.

During this evening (Sept. 16), I employed myself in taking down the following information of John Young respecting the produce and climate of Chicoutimi:—

Mr. Nicholas Andrews, Clerk of the Post of Chicoutimi, in the early part of May last year, as soon as the frost was out of the ground, planted eleven bushels of potatoes; were dug up the latter end of Oct. and produced 127 barrels; a great quantity had been destroyed by the pigs getting into the garden. I am told in Mr. M'Leod's time, which is about seven years ago, they tried Indian corn, oats and turnips, and succeeded; cucumbers grow very well. This spring I sowed in the garden, which came to maturity, red-beet, onions, carrots, radishes and cucumbers. It always freezes ten or twelve days sooner at Chicoutimi than at Lake St. John. Last fall, when I started from Chicoutimi in the middle of September for Assuapmousoin, the potatoe tops were all frost-bitten. I went past the post of Lake St. John, five days after, those there were as green as in the month of June. I account the difference of climate to be in consequence of the proximity of Chicoutimi to the salt water. At Chicoutimi, three or four days after the frost is out of the ground, about the 5th or 6th of May, it will be fit for cultivation, the ground about is excellent for a farm; at the latter end of October the frost regularly sets in. There is no great difference between the seasons of Chicoutimi and Quebec; the Saguenay is frozen down to St. Marguerite, this is in general safe, except opposite to the hay-ground a league and a half from the house: it is dangerous in consequence of the rapids, and a person ought to be cautious in crossing the ice owing

to the seal holes. I consider the land between Chicoutimi and Post Lake St. John to be very good, except that on Lake Kenwangomi, which is rocky; spruce, white birch, white and some red pine and fir in that lake until we reach Les Aunes, where there is elm, ash, spruce, fir, and some pine here and there; the best ground I conceive to be on La Belle Rivière.

"In Lake St. John the River Perebonea as far as we ascended is good land for settlement. I have made several trips to the Post of Assuapmousin, where the land is low and swampy: for the first fifteen leagues there is some middling ground, but from thence to the Post it is mountainous; the river is one rapid, white with foam.

"This spring the Sagueuay up to Chicoutimi was navigable on the 18th April, it was counted a late season; the navigation is closed about Christmas, according as the high tides answer."

Sept. 18.—After leaving Sable Point we turned on our left into the River Pastagoutsie, leading us into a series of very beautiful lakes, one of considerable extent, to which I gave Mr. Hamel's name; we pursued our course till we came to the rapids six miles from Lake Kenwangomi, the timber much the same; one river was so blocked up by rushes we could not penetrate far with our large canoe.

This season of the year there is not enough water to float so large a canoe as ours, it was with great difficulty we passed the rapids. I would recommend in all expeditions of this sort a small one to be taken in addition to the larger as easier of portage, as also rendering the facility of research greater.

The soil on the land was good but rocky and in detached masses. Previous to leaving Kenwangomi we passed a considerable outlet from the lake which I am told leads by rivers and lakes to St. Paul's Bay.

Sept. 20.—Started from the Post of Chicoutimi at half past one, and arrived at a place where two rivers meet in sheets of foam at four; here the difficulties of ascending the river with the canoe, or of taking it over the mountain which is exceedingly steep, induced us to consult together and send the canoe back to the Post with the greater part of the provisions and two of the men, whilst Mr. Hamel, Nastash, (the Indian guide), Gill, Young and myself should strike into the woods towards the little river, which runs from Lake Kenwangomi into the Decharge. We ascended the mountain, saw a fine flat of considerable extent; fir, very little, white spruce and white birch and poplar formed the timber, there was fine land on each side of us for colonization as we ascended in the canoe. The rapids as far as this are magnificent, impassable for canoes of any size shape or sort.

Sept. 21.—At ten A. M. we reached the summit of a hill four hundred feet above the level of the water, from whence we perceived a fall, the sound of it we had heard for some time in descending. We first reached six succeeding falls, each on an average ten feet high, at the highest of them the rock is so perpendicular that any person can walk without receiving much damage. From these we ascended to the great falls which are about 240 feet, made a sketch of them. In spring when the waters are high they must be magnificent indeed. The name of the river is Pastagoutsie.

I believe confidently that these falls being heard at a very great distance in spring, their being very near the Saguenay, together with all the Indians affirming there are no great falls in that river but a succession of great rapids, are what gave rise to the famed falls of the Saguenay which every one has heard of but no one seen. The ground over which we passed is rocky, but where soil is it is a fine mould: the timber black and grey birch and a few white pine, epinette, fine cedars, white spruce, and in one place passed through a considerable sized sugary of small maple. Continued our route along the course of the Pastagoutsie till one, when being satisfied with the soil we directed our course towards Beau Portage, passed over a good extent of plain, the soil was tried three times, once in mixed timber, the second time in spruce, and the third in fir ground, and found them all good for cultivation, the spruce ground will require draining. About a quarter of a mile from our present encampment there is an extensive grove of white birch of a very large growth; there the ground was tried and found sandy. Passed over this day fourteen brooks of excellent water.

As yet I have not seen any timber that would prevent a good working axe-man from clearing and preparing it in piles his six or seven acres per month. In speaking to Nastash about the falls of the Saguenay, she said there were none, but only a succession of very great rapids, and that she had never heard any Indian speak of them: she is upwards of fifty. She tells me there are on the same river falls higher than those we saw yesterday, that the indian name for the lake to which I have given Mr. Hamel's name is Assinigaashtets (a rock that is there) but the whole river from Lake Kenwangomi to its junction with the Saguenay keeps the same name; there are six portages, two very long ones, one of them longer than the other, the other four short. On the left bank of the river are long slants and no hills, where we reached on the 18th was the height of lands, from whence the rapids commence, and are interrupted. At the rate of a white man's travelling it would take six days to walk from Lake Kenwangomi along side of the river to where it falls into the Saguenay.

We tried the soil in a mixed bush, found it sand mixed with yellow earth; an hour after came to an extensive swamp which we passed over and returned to the Post of Chicoutimi at two, passing over during the day fifteen brooks.

Sept. 23.—This evening Mr. Corneau gave me a plan of the country between Chicoutimi and his post at Shippashaw. I have been very minute in taking down his information of the country which I marked on the plan. He likewise gave me the names of several lakes and rivers not put down in the map Mr. Verrault left at the Post Lake St. John for Mr. Stuart.

The house at the Post of Chicoutimi was built in the years 1794 and 1795. At the distance of 170 feet from the banks is a rock 11 feet high, and the tide rises five feet above it : to leap upon it was a favourite amusement of the people of the post a few years ago, this encroachment of the river has been made in these forty years.

(Signed)

W. NIXON,

Ensign, 66th regt.

To ANDREW STUART and DAVID STUART, Esquires,
Commissioners for exploring the lands in the
neighbourhood of the Saguenay, Lake St. John,
&c.

Gentlemen,

Having had the honor of being employed as Surveyor, under your orders in the Saguenay Expedition, I hasten to lay before you a Report of the manner in which my time was employed in the several visits and surveys made by me in pursuance of my instructions, on the right bank of Lake St. John and on its tributary streams and outlets, as well as on the Peninsula, formed by the outlet of the Lake on the one side, and by the river Chicoutimi, the Lakes La Belle Rivière and the river Kuspahigan on the other.

I venture to hope that you will forgive the ill-arranged expressions and quotations which will be unfortunately but too frequent in the course of my Journal.—I shall however use my utmost endeavours to make my Report as intelligible as possible, and to recompense your attention by authentic facts, which will, I hope, be confirmed by my two honorable fellow travellers, Messrs. Baddely and Nixon, for whose praise my pen would be too feeble, and I shall therefore abstain from entering into the detail of the pains they took to render themselves of service to the expedition, even by the most minute researches, as will be seen by their Report. Hoping that you will grant me the indulgence I desire, I take the liberty of subscribing myself,

Gentlemen,

Your most devoted, &c.

J. HAMEL, Surveyor.

SAGUENAY EXPEDITION.

*Lake St. John, &c. &c.**Journal kept (by Mr. Joseph Hamel.)*

WEDNESDAY 6th August 1828.—Having caused our baggage to be carried yesterday evening on board the schooner *La Clairisse*, capt. Aug. Dechene, of the River Ouelle, of fifty-three tons burthen, and having received orders to be ready to embark early this morning, I was on the wharf at half past five, and found Mr. Baddeley waiting there. Messrs. Stuart, Wagner and Bowen arrived very soon afterwards, and then Mr. Nixon, upon whose arrival we went immediately on board, and weighed anchor at three quarters past seven A. M. We found on board five Voyageurs and two canoes, destined for the expedition; the persons composing which were as follows:

Andrew Stuart, Esquire, Commissioner; T. H. Baddeley, Esquire, Lieut. R. E.; Mr. W. Nixon, Lieutenant 66th Regt. Benedict Paul Wagner, Esquire; Mr. Edward Bowen and myself.

Voyageurs.

Guillaume Gill,
Grégoire Laneuville,
Alexis Boisvert,
Noel Paquet,
Joseph Beland.

The wind being east, we had to beat down the river, as long as the tide served us, and reached the old ship yard at St. Patrick's Hole, on the Island of Orleans, three leagues below Quebec, where we went on shore at $\frac{1}{4}$ past 11 A. M. Provisions were brought on shore and we dined at 2 o'clock under a shed in the yard, which is now abandoned. At 4 o'clock, P. M. we received orders to embark, which we did, at a $\frac{1}{4}$ past four, the wind continuing foul. At 5 o'clock our schooner was hailed by a boat; the captain immediately rounded to, and the boat coming up, we recognized Mr. Proulx, one of the Surveyors attached to the expedition, whom we had left at Quebec in the morning. At 7 o'clock, as the wind increased, and the schooner was without ballast being opposite the church of St. Jean, on the Island of Orleans, it was considered advisable to bear away for the harbour of the river L'Assieur, a mile and a half higher up, where we went ashore about nine o'clock, and lodged at the house of the widow P. Pouliot.

Thursday, 7th August.—The wind in the same quarter, and blowing as fresh as it did yesterday; being in consequence unable to proceed, I piloted Messrs. Baddeley and Nixon across the fields, on the property of Lachance and Blouin, in search of minerals and vegetables. We went as far as the wood, a distance of about two miles, we then returned, having met with some success in both our pursuits, and arrived at our quarters at half past eleven, A. M. At noon, Mr. Baddeley and myself took the sun's meridian altitude, at the door of the house (the widow Pouliot's) in which we were lodging, and found the latitude to be $46^{\circ} 53' 40''$ north.—About 4 o'clock, the wind having abated, and the tide beginning to ebb, we went on board and beat down the river as far as the harbour of La Grose Isle, where we went ashore about nine o'clock, P. M. and slept comfortably enough.

Friday, 8th August.—We set sail about 5, A. M. with a fair wind, and came to an anchor a mile and a half to the south west of the Saguenay, about three miles from the shore, where we were obliged to remain for the night.

Saturday, 9th August.—Set sail early in the morning for the harbour of Tadousac, with a very light breeze from the west, and that afterwards failing, we were carried by the currents near to Isle Rouge, where we were obliged to come to anchor in seven fathoms water, and at about twelve miles from the land. At ten A. M. set sail again with a fine breeze from the west, which carried us in two hours to Tadousac, where we arrived too late to take the sun's meridian altitude. Mr. Brownson, the storekeeper there, came alongside before we went ashore, and received us very politely on our arrival at the post. I began immediately to make a plan of the post and harbour of Tadousac, and did not finish my work until after sunset.

Sunday, 10th August.—Busied the whole afternoon in receiving the provisions destined for the canoe No. 2, which being unable to carry the whole, we were obliged to put part on board the boat which was to carry the party attached to the expedition as far as Chicoutimi. At one o'clock the party embarked in the boat commanded by Mr. Brownson, and very much encumbered with baggage; the wind hanging to the eastward, we set sail as soon as we entered the Saguenay, but unfortunately it failed us, when we were about three miles and a half from the mouth of the river, which prevented us from doubling the Cape de la Boule, on the left bank of the Saguenay opposite to which the current is very strong. Our two canoes however succeeded in doubling it, and the men encamped a very short distance beyond it, whilst we were compelled to encamp most uncomfortably in a bay below it, where, as we had only a small axe and green wood, we passed a very bad night, the rain falling abundantly, with the wind at north east.

Monday, 11th August.—The people in the canoes having been uneasy as to what had happened to us, came to us about nine o'clock, and

Mr. Proulx went on board one of them. We left our camp without regret at ten A. M. The tide beginning to flow with a light wind from the east. After sailing the whole day we encamped about twenty miles from the mouth of the Saguenay, in a bay, to which we afterwards gave the name of the Bay of Comfort, having found there dry wood enough to keep up a good fire during the whole night.

Tuesday, 12th August.—The wind was west ; we embarked at nine o'clock, and proceeded against both wind and tide ; we went ashore at noon, for the purpose of taking a meridian altitude.—At three quarters past twelve we re-embarked, and at two P M we entered a bay on the left bank, opposite Trinity river, which we called Halfway Bay ; i. e. thirty-six miles from Tadousac, according to the estimate of the Voyageurs, which distance ought, however, to be reduced at least one fifth, if not one fourth.—Mr. Baddeley and myself were busied in taking different observations until eleven P M we then re-embarked and continued our voyage. And during that tide we reached La Descente de la femme ; a distance of about sixteen miles above Half-way Bay.

Wednesday, 13th August.—Before we embarked, Mr. Baddeley and myself took the sun's meridian altitude, and found the latitude to be $48^{\circ} 22' 29''$ north.—At half past three, we doubled the cape on the east ; at a quarter past five, the tide having been ebbing for nearly an hour and the current being very strong against us, we entered a bay, (Bear's Cove) on the right bank of the Saguenay, in order to encamp there. At half past seven P M Mr. Proulx came up with the two canoes. At nine o'clock, while Mr. Baddeley and myself were engaged in making different observations, the sky became clouded, and there fell a violent shower, followed by a steady rain, which continued during the whole night. About eleven we were informed that a little canoe belonging to Mr. Brownson, in which were a barrel of rum and the stand of Mr. Proulx's Theodolite had gone adrift. The other two canoes were sent in search of it but without success.

Thursday, 14th August.—We left this place at half past five A M and rowed till a quarter past seven, when we set our sail, having a light fair wind :—We took to our oars again about eleven o'clock, and went ashore towards one o'clock P M about one and a half miles below Chicoutimi, intending to proceed thither on foot, being all wet through by the constant rain which had fallen this day.—We arrived there at two P M and were very well received by Mr. Andrews, the clerk of the Post, to whom in every respect the highest praise is due for the attention the Expedition received from him : every individual attached to which, would be wanting in gratitude if he failed to testify it publicly. An hour after our arrival, the canoe which had gone adrift the preceding night, was brought to the Post by Guillaume Gill and two other Voyageurs, who said they had found it about six miles above the place from which it had gone adrift, and upon the opposite shore ; it had been carried off by the flood tide ; which affords a striking proof

of the strength of the tide, eleven miles below Chicoutimi. Mr. Baddeley and myself passed the evening in watching for the passage of several stars, but we were as unlucky as we had been the three preceding nights ; as the sky became covered with clouds before the time of the stars passing.

Friday, 15th August.—I was busied in preparing the provisions and baggage for starting on the following day for lake St. John, by the river Chicoutimi, &c., according to the arrangement which Mr. Stuart had then first made, that I should go with Mr. Baddeley in the canoe No. 2, which Mr. B. was to command ; that we should proceed immediately to lake St. Jean, and that, commencing our operations on the right bank of the lake, we should explore the whole of that part of the lake between the grand outlet and the river Assuapmousoin, which place the Deputy Surveyor General was expected to reach : but that if by chance he should not be there on our arrival, we should proceed onwards, until we met him. Mr. Stuart was to proceed up to lake St. John, in the small canoe with Mr. Brownson ; Mr. Proulx was to explore Ha ha Bay ; and Messrs. Wagner, Nixon and Bowen, in one of the large canoes, were to explore the peninsula formed by the grand outlet, the river Chicoutimi, the lakes, &c. Took the sun's meridian altitude to-day, and determined the latitude of Chicoutimi to be $48^{\circ} 24' 37''$ north.

Saturday, 16th August.—We caused twelve loads to be carried over the portage of Chicoutimi, which is two miles long ; and received our instructions in writing ; but could not start in consequence of the rain which fell in the morning.

(Copy of the Instructions :—)

“Instructions to Mr. Baddeley and Mr. Hamel :

“You are requested to proceed to lake St. John, entering that lake by La Belle Rivière, and in the first instance to make an exploring survey of the country, lying between the grand outlet of that lake and the river Assuapmousoin.

“If the Deputy Surveyor General should not then have reached] that river, you are requested to continue your exploring survey until you shall meet that gentleman with his party. Your return will be either by the grand outlet or lake, or by the Belle Rivière, as you think best. Another party being employed to survey the peninsula lying between the Belle Rivière and the lake on the one side and the grand outlet on the other, all the objects of the mission will be attained without your descending the latter stream. You are furnished with a letter from the sub-lessee of the Posts to the clerks in charge, which will entitle you to any assistance that you may require from them.

(Signed) A. STUART, Comsr.”

“Chicoutimi, 16th August 1828.

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Sunday, 17th August.—One part of our baggage having already passed, we considered ourselves as on our journey, and made no scruple of causing the rest to be carried over, and in setting out. We left Chicoutimi therefore, at noon, Messrs. Nixon and Bowen accompanied us as far as the place of embarkation; we embarked about half past one, with three Voyageurs, Guillaume Gill, John Young and Alexis Boivert. At half past four, in passing the Portage des Chiens, we met two Canadians, two Indians and a squaw, coming from Assuapmoussoin. At half past five we found ourselves at the end of the Portage de l'Enfant, where we encamped, on account of the difficulty we should have experienced in finding a fit place for encamping, if we had proceeded farther. The soil at the Portage is blue clay, either pure or mixed with sand: and the timber is red pine and cypress, white birch, spruce, sapins, &c. with a few white pines. On the shore of that part of the river, which we ascended to-day, the principal timber is spruce and white birch; the land appears unbroken, and the soil, though light, susceptible of cultivation.

Monday, 18th August.—It rained the whole night. We left our camp at eight A M, and after having been out in many showers, we were compelled to encamp at one o'clock below the Beau Portage, in consequence of the rain, and for fear of spoiling our provisions.—The principal timber as far up as this place, is sapin, white spruce, white birch, aspen, with a few white pines and black birches, The soil appears sandy. It rained during the whole remaining part of the day.

Tuesday, 19th August.—The rain continued the whole night, and the wind was north east. About ten o'clock the wind changed to the west. At noon we were at the Portage des Roches, where we found the latitude to be $48^{\circ} 14' 38''$. While at dinner there came on a violent thunder shower, which prevented our starting again before three quarters past three, P M. The showers being frequent, we could not get farther than the Sandy Point, on the north side of lake Tsinuagamitoh. As far as the Portage de l'Islet, the land appears very fit for cultivation; but from this Portage as far as lake Tshinuagamitsh, it is broken and rocky.

Wednesday, 20th August.—We embarked at a quarter past seven; Mr. Baddeley and myself went ashore at half past eight, on the north shore of the lake, to collect specimens of the rocks; at a quarter past ten we were opposite the mouth of the river Upikubatsh; here we found felspar, mixed with magnetic iron; we took the sun's meridian altitude, which here gave the latitude $48^{\circ} 16' 25''$. At 4 o'clock we reached the end of the lake, that is to say, the height of land. Our Voyageurs made two trips across the Portage of Tshinuagamitsh, and we encamped on the side of lake Tshinuagamitsh, leaving one load for each man to be brought across the Portage in the morning. The timber on the shores of the lake Tshinuagamitsh is white birch, cypress and red pine of mid-

dling quality, sapin and spruce; and the soil is clay mixed with sand. There is some ash and white spruce upon the banks of the lake where we encamped: the wind was, during the whole day, north west.

Thursday, 21st August.—We embarked about nine A M, and at eleven found ourselves among the rushes of Alder river. We dined at the Portage des Aunais, which is about twenty-five chains in length. We re-embarked immediately afterwards; but as this river is narrow and winding, and the alders grow in several places across the channel, Mr. Baddeley and myself were obliged to go ashore, in order to follow the course of the river on foot, under the pilotage of Gill, by a path which is but badly cleared. We stopped to encamp near the Belle Rivière, where our canoe did not arrive till seven o'clock. There is very fine flat land along the whole of this river, the soil very good and the wood, elm, ash, alder, &c., all of which are trees found only on good land.

Friday, 22d August.—The wind was south west, at half past five, Mr. Baddeley and myself commenced our journey on foot, and at six o'clock reached La Belle Rivière; we embarked at three quarters past six, and went ashore at the Portage de la Belle Rivière, which is eighteen chains long. From this Portage downwards the river takes the name of Kuspahigan. The current of the Belle Rivière is very equable as far as the falls, but is much stronger from the Portage to lake St. John. The land on the right bank of the river is of a superior quality from the River des Aunais to the lake. There are beautiful points of land all along the Belle Rivière, covered with elm and ash. The highest part of the bank is not above thirty feet, and upon this part are found aspen, spruce, sapins, some pine and white birch; and on each side of the river Kuspahigan, the land (which is a loam) is wooded in part with elm, ash and fir. We reached lake St. John at noon, and dined there; we continued our journey afterwards for the grand outlet, but could not reach it, and were obliged to encamp upon one of the very numerous islands between the two outlets, which we called Dalhousie Islands. These islands are mere rocks and unsusceptible of cultivation. The abundance of the magnetic iron of which these rocks are (in part) composed, renders the needle useless in their neighbourhood: and among the specimens which Mr. Baddeley collected on the island where we encamped, I found some which possessed polarity.

Saturday, 23d August.—The wind being west we embarked at half past eight o'clock, and reached the north side of the grand outlet at half past nine. As this was the point at which we were to begin our operations, we were to begin our operations, we remained there the whole day, and the following night, in order to take astronomical observations. I was further busied during the day in Trigonometrical observations.

Sunday, 24th August.—We commenced our journey about eleven o'clock, and at about one and a half miles from the point of departure,

we found a brook which we at first took for a river ; but having followed its course upwards for about a mile and a half, we were convinced that it was really a very small brook, and that during the height of the waters, the lake reached that point : We therefore returned. The right bank of this brook is covered with aspin, sapin, ash and brushwood, and the land very fit for hay ; but the left bank, which is about ten feet above the water, is sandy, with a tendency to be swampy. From the point of departure to this brook, the bank of the lake, which is from six to ten feet above the water, is sand, and behind this there is a swamp to about half a mile in depth, but which cannot be crossed because it is covered with water ; however, the high woods of spruce, &c. may be seen behind it. We continued our journey and encamped at three quarters of a mile from the river Cocuathimi ; up to which place the banks of the lake continue the same.

Monday, 25th August.—The wind being west, and the lake too rough, we were unable to continue our journey. In consequence of this I set off with Gill for the purpose of reconnoitering the ground, and very soon afterwards arrived at the mouth of the river Cocuathimi. I then sent Gill back, to inform Mr. Baddeley of this circumstance, in order, that if it were possible he might proceed forwards, but instead of the canoe, Mr. Baddeley and Mr. Nixon, (which last had been of Mr. Stuart's party) came to me ; and the latter gentleman informed me that Mr. Stuart with the other gentlemen belonging to the expedition were proceeding to make a tour of the lake. We therefore returned to our camp, and were obliged to remain there during the rest of the day. Neither Mr. Baddeley nor myself had expected this change of determination on the part of Mr. Stuart ; for that gentleman wishing Mr. Baddeley to visit the country behind St. Paul's Bay, thought it advisable to put Mr. Nixon in his place ; and the news of this was like a thunder stroke to me, seeing that we agreed so well together ; Nevertheless, when I became acquainted with Mr. Nixon, I had no reason to complain.

Tuesday, 26th August. We began our journey, every one in the canoe, to which he was appointed, as follows :—

Mr. Stuart returning to Quebec, in Mr. Brownson's canoe, with three Voyageurs Messrs. Baddeley, Wagner, Bowen and Goldie, (the latter from Mr. Bouchette's party) in two canoes with six Voyageurs, to make the tour of the lake, then returning by way of Chicoutimi, will proceed to Malbaie and afterwards visit and examine the supposed volcano at St. Paul's Bay, except Mr. Wagner, who will join Mr. Proulx, and entering by the river St. John, will return by the river Malbaie. In my canoe, Mr. Nixon will take the place of Mr. Baddeley with four Voyageurs. We are to explore this part of the lake, as far as the mouth of the river Assuapmousoin, ascending all the rivers which we may find on our way ; and afterwards to visit the penin-

sula formed by the grand outlet on the one side, and the river Shikutimitsh, or Chicoutimi, the lakes Tshinnagamitsh, Tshinuagamitshish, the river des Aunais, La Belle Rivière and the river Kuspahigan, on the other. We parted at the mouth of the river Cocuathimi, giving each other a parting cheer, and were not to meet again till we arrived at Quebec. We ascended this river to the distance of about a mile and a half from its mouth, and then finding it too narrow and too much obstructed for us to proceed further, I proposed returning. But previous to this, Mr. Nixon and I went with two men, and one of us on each side the river, to reconnoitre the land, which we found sandy, covered with spruce, sapins and aspin, and but ill adapted to cultivation. By the evening we had proceeded as far as Adder Point, (La Pointe aux Coulevres) a distance of about eleven miles from the grand outlet, following the sinuosities of the lake. At this place we encamped.

Wednesday, 27th August.—I was necessarily busied in making certain plans, until noon; I then began to measure a base line across the brushwood, in order to ascertain the width of the lake.

Thursday, 28th August.—It rained till near ten o'clock. I continued my base line during the remainder of the day. The swamp continues along the lake shore, as far as this place. The wind changed to the east during a heavy shower, which fell this evening, and continued in that quarter during part of the night.

Friday, 29th August.—The wind was west, and the weather very cloudy; we arrived at one of the branches of the river Peribauka, at half past one P M, and after having dined, we hid part of our provisions and took with us only a sufficient quantity to serve us while we ascended a river, (Musk-Rat River) which, judging from its width and depth, did not appear likely to lead us far, and which, we believe to be the river Peribaudraiche, as laid down in Panet's chart. We came into the river Peribauka about three o'clock P M, having been obliged to disembark several times, in order to lighten the canoe, and enable it to pass through the rushes, which abound in this branch:—no better land can be found than that on each side of this branch, it lies low and is wooded with mixture of elm, ash and alder, and if once drained, would make

admirable meadow land. We ascended the Peribauka about four miles and a half, and encamped on the left bank. The land all along as far as this is clay mixed with sand, very well adapted for cultivation, and the timber is spruce, aspines, white and black birch, with here and there a white pine, all lofty, but of a moderate thickness, the pines excepted.

Saturday, 30th August.—The wind west this morning. We continued our journey, and passed three portages in the course of the day.

The last was accomplished with much difficulty, as we had to pass over steep rocks. The soil remains as before described, as far as the beginning of the first portage, but from the first to the fourth portage, where we encamped, there are rocky points of about fifty feet high; the timber is chiefly spruce, white birch, with a small number of elm and ash. The wind varied from east to west, during the whole day, and in the evening was east.

Sunday, 31st August.—The wind was west during the whole day and the weather very fine. We caused our own linen and that of the men, to be washed.

Monday, 1st September.—We continued to ascend the river, and at the end of the portage we discovered a beautiful lake, studded with islands, to which we gave the name of N-dhaouiloo, the indian name of Andrew Stuart, Esquire, commissioner, given him by the Hurons as one of their Honorary Chiefs. Before we reached the end of this lake, we entered a pretty river about three perches wide at its mouth, which we ascended about a mile; we were then obliged to return, on account of its want of width, and the obstructions we found in it; Gill, one of the Voyageurs, gave it the name of Kuna, on account of the colour of its waters. The land on each side of the lake and of this river is very good, and the timber principally red and white spruce, white birch and sapin, with here and there a pine. Arrived at the head of the lake, which is about four miles long, we found a pretty fall, of which a sketch was taken by Mr. Nixon, while I was employed in passing the portage, (which is about 25 chains long) with Gill and Boisvert. Perceiving nothing but rapids at the end of the portage, I thought it better to go no further, as well because we were short of provisions, as because we supposed ourselves to be in the river Peribaudraiche, which must be very inferior in width, &c. to the river Peribauka. The soil and timber appeared to continue the same; *ie* level and good only below the first portages, and along the shore of the lake. We returned and encamped below the first portage, the wind being east with an appearance of rain.

Tuesday, 2d September.—We arrived at the place where we had concealed our provisions at noon, all of us wet through; it having rained the whole morning, with the wind at west. The rain continued the whole afternoon.

Wednesday, 3d September.—As John Young was very unwell, and had eaten nothing for several days, Mr. Nixon and myself determined to carry him to the post of Métabetchuan. In consequence of this, Mr. Nixon started for that post, with Gill and Boisvert. I remained with Terreau, and employed myself in drawing plans, &c. during the four days they were absent.

Thursday, 4th September.—The rain fell so violently during the whole of this day, the wind being east, that even my tent afforded me no shelter.

Friday, 5th September.—It rained till eleven o'clock, at which hour the wind changed to the west.

Saturday, 6th Sept.—Wind south west. Weather fine. In the afternoon, feeling more and more anxious about my canoe, I crossed the wood and the swamp with Terreau, and reached the borders of the lake, but could see nothing of it. While crossing the swamp I observed that if it was drained it would produce hay, for there is abundance of franc foin there. About eight in the evening I heard the report of a gun at a great distance, it struck me that it was the canoe, which was unable to find the entrance of the river. I was not mistaken: and caused a gun to be fired, which as well as three other shots we fired afterwards were not heard by them. The canoes arrived about a quarter past nine, and Mr. Nixon brought me a private letter from Mr. Stuart with some refreshments. He informed me that Mr. Bouchette had made the tour of the lake, and was returning.

Sunday, 7th September.—We embarked at half past seven, P M, and returning by the lake visited that part of the river Peribauka, between the little branch and the mouth of the river, a distance of about three and a half miles. We went to reconnoitre a bay on the right bank of the river, and opposite the entrance of the little branch, where we found a fine river, which according to the information I have received respecting it is the river Peribaudraiche, to which we gave the name of David River, in memory of David Stuart, Esquire, one of the commissioners. This river is about ten chains wide at its mouth, and runs to the westward. We ascended it as far as the first portage, a distance of about nine miles and a half from its mouth. The land on each side is generally low, and though light (that is sand mixed with clay) is tolerably susceptible of cultivation: the timber consists of white birch, spruce, pine, sapin, with a little elm, ash and willow. I passed the portage, which is about six chains long, and as far as I could see the timber appeared to be the same. We therefore determined upon returning, and encamped on the spot where Mr. Baddeley's party had encamped on the 26th August, which we knew by an inscription, conceived in these terms, "Exploring Expedition encamped here in the night of 26th Aug. 1828, God Save the King, lat. 48° 42' 37".—The wind was west the whole day, and about 4 o'clock it became much colder.

Monday, 8th September.—The wind was north west, and in the morning, there was much appearance of rain.—At half past eight we embarked just as it began to rain gently. At three quarters past nine, the rain having considerably increased, we entered a small river, to which we afterwards gave the name of Boisvert, where we went ashore.

After dinner we ascended this river about half a mile, and were obliged to return, on account of its becoming too narrow and too much obstructed. *Aspin*, white spruce and white birch form the principal part of the timber, and the soil consists of a mixture of clay and sand.

Tuesday, 9th September.—We embarked at a quarter past six, after walking in the water about a mile through the lake, to lighten the canoe and entered among the islets of *Mistassini*, from which place to the river, we were under the necessity of hauling the canoe along and walking in the water during the greater part of the time. At half past one we entered the *Mistassini*, a magnificent river, if we regard its breadth, which, at this place is about a mile and a half; but as regards the soil on each side, it is mere sand, and the timber, spruce, cypress and white birch with a few elms, close to the banks. We ascended it about ten miles, and observing no change, determined to return, in the humble conviction that it had not been misnamed in certain maps where it is called *La Rivière de Sable*. We encamped at the place where we had hidden part of our provisions, when we entered the river.

Wednesday, 10th September.—We left our camp on the sand islands or Islands of *Mistassini*, and by breakfast time reached the place where Mr. Baddeley had slept on the 27th August last, which we knew from a note conceived in these terms, "Exploring party encamped here on the 27th August. All well. Meridian altitude of a star double angle $99^{\circ} 37'$ index error $+ 22''$."

We gave this Point the name of *Baddeley's Post Office*, and left it at half past ten. Soon afterwards we entered the mouth of the river *Assuapmouison*, passing between many small islands covered with brushwood, and about noon we went on shore on the right bank of this river, a little above the island which lies farthest up the river. The whole of the land from the river *Mistassini* to the river *Assuapmouison* is sandy, and the timber chiefly spruce, sapin and white birch with some pine and aspin here and there. We dined at this place, and as the object of our mission was fulfilled as far as regarded the exploring of this part of the lake, we set out on our way to the post of *Mitabetchuan*. At a quarter past two we went ashore at *Blue Point*, where we expected to find certain fruit, as cherries, plums, raspberries, &c. but we found nothing but the trees. We saw here the ruins of the chimney of the house belonging to the old post at which Mr. *Tasché* carried on the fur trade during twenty years. We re-embarked about three o'clock, and proceeded as far as the *Pointe aux Pins*, where we encamped in order to visit the *Isle aux Coulevres*, which we effected the same day, but saw no adders, probably because it was too late. The wind was west during the whole day.

Thursday, 11th September.—The wind was so strong from the west that we could not proceed on our journey before one o'clock, P. M. At four o'clock we arrived at the mouth of the river *Wiatschuan* and as

Mr. Nixon was very anxious to take a view of the falls on that river, which is about a mile from its mouth, we stopped here and immediately started with Terreau, one of our men, who had come down this river with Mr. Bouchette, and pretended to be acquainted with the falls. But instead of conducting us by the portage road, which would have led us within about fifteen chains of the falls, he led us along the bank of the river, and it was necessary for us to summon up fresh courage in order to get there, across a number of such hills and vallies as are commonly found in the heighbourhood of rivers whose banks are not less than from two to three hundred feet high. Nevertheless, when we arrived there we were amply paid for the fatigue we had undergone in reaching them by the magnificence of those falls which do not yield to those of Montmorency, near Quebec, in point of height, and surpass them in the manner in which the waters are precipitated among the broken rocks; as may be seen by the view taken of it by Mr. Nixon, whose talent in this art is of no common kind, and who will not fail to give a correct resemblance of it. We returned to our canoe at six o'clock, and found our tent pitched, for our Voyageurs perceiving that the wind increased, and supposing that we should return late, thought it right to be ready before hand, although we had told them we intended proceeding farther, and going as far as the post. So we passed the night there. The wind was strong from the north west. The timber along the portage as far as the falls is of a superior quality to what it is at any place I have visited up to this time; being a mixture of cedar, black birch, maple, spruce, pine, &c. and the soil where I examined, it was very fit for cultivation.

Friday, 12th September.—At a quarter past six we embarked with a strong breeze from the north west, which prevented our making the traverse at the ordinary place, and compelled us to follow the shore as far as the post of Metabetchuan, where we arrived at three quarters past ten, and found there Mr. Alexander Murdoch, clerk of the post, a most respectable gentleman, by whom we were most hospitably received.

Saturday, 13th September.—As we were obliged to bake and get our linen washed, we could not leave this post until after dinner; when starting we were saluted by several shots, which we returned in the same style. The wind was south west the whole day, and the weather cloudy. About eight o'clock we reached Kuspahigan, where we encamped.

Sunday, 14th September.—We explored that part of the lake between Kuspahigan and the right bank of the grand outlet, and found that all along the borders of the lake in this part, the land is sandy:—But at a short distance back the soil is good, as we ascertained by entering a small river about a mile and a half to the north of Kuspahigan, which we ascended from fifteen to twenty chains, before we found the channel too much obstructed. The smaller outlet is five miles from Kuspahigan, and the side of the island between the two outlets next to the

lake is about a mile and a half ; that next the smaller outlet half a mile, and the side next the grand outlet, two miles. We returned and slept at our camp at Kuspahigan, where we had left our baggage. The wind was south west the whole day. Gill was troubled with a pain in his loins, which makes him unable even to steer the canoe, and we have therefore only three men left whom we cannot divide, so as to cross the peninsula, and send back the canoe ; in consequence of this we shall be obliged to proceed to Chicoutimi.

Monday, 15th September.—We embarked at forty minutes after seven. Our provisions and baggage forming two loads at the portages. We got within a short distance of the portage of Tshinuagamitsh, where we encamped. In crossing the alder lands, I went a considerable distance into the wood, and found the land level and good.

Tuesday, 16th September.—In the morning we visited a small lake on the north side of Tshinuagamitshish, and connected with that lake by a small channel of about three chains in length, and about one chain in width, to which I gave the name of Lake Nixon. There is deep black land covered with alder all around this lake, and upon the banks, (which are about twenty-five feet above the water) to the distance of at least a mile, as I know, by having gone that far myself, the land there is unbroken and level, and the soil an excellent loam ; the timber is sapin, black birch, spruce and some white birch ; I saw only one pine. Nos. XXII. and XXIII. of Mr. Nixon's collections are specimens of the soil. The lake is thirty-six chains long, lying south west and north east, and about ten chains wide. We embarked at a quarter past ten, with the intention of proceeding, but from the information I had received from different sources, that the two lakes were connected by a channel to the northward of the portage of Tshinuagamitsh, we were induced to enter a channel of two chains wide, and after proceeding about twenty-five chains, came into a basin twelve chains wide and twenty long, at the end of which we found a small channel one chain wide, choked with alders, and having a strong resemblance to the Rivière des Aunais. We went up it about twelve chains, and were obliged to return in consequence of the quantity of alders. Mr. Nixon and I ascended the right bank which is about fifty feet high, by climbing over the rocks ; it appeared to us that we were on a rocky point which did not extend to any great distance, and the small quantity of soil we found there was of the same quality as the specimens before spoken of. The timber, as far as our sight could reach, consisted of a mixture of spruce, sapin and black birch, all lofty. The general course of this river is east, which strongly supports the supposition that the two lakes are connected. We descended the river and at noon reached the portage ; we passed the portage, which is about a mile and one fifth long, and dined, we started again at three o'clock, with the intention of visiting whatever might be worthy attention, on the north side of lake Tshinuagamitsh. The soil all the way along the por-

tage, is blue clay mixed with sand, and is of an excellent quality; the timber is white spruce, black and white birch, sapin and red pine. By the evening we found ourselves within two miles and a half of the little river of the bay of Coushkaia, or at the supposed junction of the two lakes, and encamped there.

Wednesday, 17th September.—We ascended this river, the course of which is as far as we went west south-west, about four miles and a half, making seven miles from its mouth, and being prevented by the alders, which obstructed the channel from proceeding further, we went to reconnoitre the country, and at a distance of about half a mile, Mr. Nixon discovered a small lake of which this river forms the outlet. To this lake he gave the name of Lake Young; it may be about thirty chains long and seven wide. All the land we crossed to arrive at the lake, is rocky, and the small quantity of soil found there is a black earth. Along the whole of the river there is a mixture of red and white spruce, with some pine, white birch and sapin, and the soil is formed of the same mixture of clay and sand. The wind was west the whole day, and increased in the evening. We encamped on the sandy point where Mr. Bouchette's party had encamped on the 11th Sept.

Thursday, 18th September.—We embarked about six o'clock, and about sixty chains from the sandy point we entered the outlet of the lake called Pastagoutsy; and Mr. Nixon gave the name of Lake Hamel, to the chain of lakes which is found in the neighbourhood of lake Tsinuagamitsh. We descended this river as far as the foot of the first rapid, a distance of about six miles from its mouth, where the waters falling us we turned back. The timber on each side is all along white birch, spruce, pine, sapin, &c., and the land good but stony. At eleven o'clock we arrived at the east end of lake Tshinuagamitsh i. e. at the Portage des Roches, and continued our journey:—At sunset we reached the post of Chicoutimi.

Friday, 19th September.—I brought down my books, while the men were preparing for our visit to the peninsula, the want of a guide for which I felt more sensibly than ever, and being unable to find an Indian, who was ever so little acquainted with the localities, I was under the necessity of engaging a Squaw, of the name of Nastash, who pretended to be acquainted with it. The wind was west the whole day.

Saturday, 20th September.—Our guide having retarded our departure, we were unable to start until after dinner. We began our journey in the canoe, for the purpose of ascending the Saguenay, as far as the mouth of the river Pastagoutsy. But when we were opposite the river des Terres Rompues, we found it impossible to pass the rapids, and it was determined to send the canoe back with Boisvert and Terreau, and that we should proceed by land. All the land on the right bank of the Saguenay as far as the Terres Rompues, is composed of blue clay, as it

is in the neighbourhood of the post of Chicoutimi. The wind was east.

Sunday, 21st September.—After two hours travelling, we reached the river Pastagoutsy, a few chains from its junction with the Saguenay. We found a fall on this part of near 249 feet high, of which Mr. Nixon took a scetch. We directed our course to the southward, i. e. keeping the river Pastagoutsy on our right (our guide declaring that she knew nothing of the country to the north of this river) and travelled during the rest of the day over a very level country, wooded as follows—viz : 1stly. A mixture of spruce, sapins and black birch, with some maple and white birch—soil, a grey loam ; 2ndly. spruce land—soil, a cold loam ; 3dly. a mixture of spruce, sapin and black and white birch—soil, loam ; 4thly, white birch—soil, loam mixed with coarse sand. We crossed several rivulets which run into the Saguenay. The wind was east, and the heat excessive.

Monday, 22d September.—We divided the party, Young and our guide accompanying Mr. Nixon ; I, on my part, started with Gill, and we directed our course for Chicoutimi, where I arrived at half past five. P. M. and found Mr. Nixon who had just came in as tired as myself. I found no difference in the timber or soil this day ; the land continuing always very level. In the course of the day I crossed sixteen brooks, all running into the Saguenay. The wind was west and the weather very hot. In the evening I determined the variation of the needle, by observations on the Polar Star : and found it $17^{\circ} 12''$ west.

Tuesday, 23d September.—My instructions having been fully complied with, as far as it was possible for me to do so without a guide, and during the time allowed for my stay here ; there remained nothing for me but to return to Quebec with all diligence ; and I therefore ordered the men to make all haste in washing their own linen and ours, so as to be able to start the following day. The wind was east.

Wednesday, 24th September.—It rained till near eleven o'clock, with the wind at east, and we left Chicoutimi after dinner, and before we encamped, reached Bear's Cove, where we slept.

Thursday, 25th September.—We set off at four o'clock, A. M., but the wind becoming too strong at sun-sire, we were obliged to land to the south of Cape à l'Est. We re-embarked about nine o'clock, but at half past ten, having both wind and tide against us, we were compelled again to go ashore. We re-embarked at three o'clock, the wind being east, and did not land again till eight o'clock, by which time we had reached Half-Way Bay.

Friday, 26th September.—The weather was calm and it rained, how-

ever, we embarked about six o'clock, and went as far as the bay des Roches, though not without danger, the wind blowing strongly from the west. At half past twelve being anxious to reach Tadousac, we embarked, although the wind had not decreased, and the tide was still flowing, and after having run the greatest risk of going to the bottom in doubling the headlands, we arrived at Tadousac, where we met Mr. Andrews, the clerk of the post at Chicoutimi, who had been detained by the wind.

Saturday, 27th September.—A heavy gale from the north-west, prevented our starting before five o'clock, P. M. we got as far as Duck River, where we slept.

Sunday, 28th September.—The weather was fine, and we reached the Malbaie River in the evening.

Monday, 29th September.—We continued our voyage with calm weather, and by night reached Green Bay, half a league to the westward of St. Paul's Bay.

Tuesday, 30th September.—We were unable to embark before half past six, on account of the length of the battures, which are mere mud at low water; and at eight o'clock the wind became too strong, and compelled us to go ashore opposite the church of La Petite Rivière, where we passed the day. Here we found Captain Bayfield, with whom we past a part of the afternoon.

Wednesday, 1st October.—The wind having gone down a little, we got under way about seven o'clock, and although we were compelled by the wind to go ashore in the course of the morning, we managed to pass Les Caps, and arrived at the battures of St. Joachim at sunset. But as it was then low water, we were obliged to wait 'til eight o'clock before we could enter the River Blondaine, which we had to leave immediately afterwards, to get into the St. Lawrence, between St. Joachim and St. Anne.

Thursday, 2d. October.—The wind was east, and the rain fell abundantly, till noon, when the wind changed. Notwithstanding this we got under way at eight o'clock, without paying any regard to the wind or tide, and continued our voyage until towards two P. M. when we were obliged to go ashore at Montmorency, to put fresh gum on our canoe. We re-embarked immediately afterwards, and at last arrived at Quebec, all safe and sound, about four o'clock. Not meeting either Mr. Lampson or his clerk, I left the canoe under charge of Gill, who was to deliver the baggage.

In this Journal I have taken care to set down no part of what was told

me during the course of my travel, but have been satisfied with relating what I have really seen, and speaking of the places I have visited and passed through referring to the Appendix which I shall give in with my Map for the more particular description of places, &c. I hope therefore that you will be pleased to accept it, as well as the profound respect of him who has the honor of subscribing himself,

Gentlemen,

Your very humble

And very obedient servant,

J. HAMEL, Surveyor.

Quebec, 8th November, 1828.

APPENDIX OR SUPPLEMENT to the Journal kept by JOSEPH HAMEL, Surveyor of the Saguenay Expedition, &c. &c. &c.

AS there would be some difficulty in finding in my Journal at the first the description of any particular place, and having besides, in making up my Journal, paid attention only to the recording of facts, and not even mentioning the latitude of the different places through which we passed (having kept separate notes of these things) I thought right to attach thereto the present Appendix, which will shew at once as a Supplement to my Journal, and as an explanation of my plan.

The Appendix will comprise the description of places, their vulgar names in French, their signification in the language of the Mountaineers, &c. The latitude as far as I have been able to ascertain it, and the longitude, by reckoning: the quality of the soil and timber, with some remarks on the advantage to be expected from the settlement of this part of Lower-Canada, which yields in this respect to no other place now settled, which I have visited up to the present time.

Tadousac is situated on the river St. Lawrence, on the east side of the mouth of the Saguenay. There is a harbour here, which could not hold above five or six vessels, and even these would be under the necessity of carrying anchors ashore. The Company holding the King's Posts have a post here for carrying on their trade with the Indians, comprehending nine buildings, employed as stores, shops, &c. besides the Post House, which is 60 feet by 20, and a chapel of 25 feet by 20. A Missionary comes here every year, and passes some time. The highest

tides rise 21 feet at this place. Longitude west from Greenwich, $69^{\circ} 13'$, and latitude $48^{\circ} 6' 44''$.

St. Catherine, Within the mouth of the Saguenay, and on the south-west shore, would hold 50 vessels, which would be sheltered from all winds except the west.

La Boule is a remarkable rock, both on account of its height and of its shape; the ebb tide is very strong opposite to it. It is 3 miles from the mouth of the Saguenay, on the north-east side.

River St. Margaret, lies on the north-east side of the Saguenay, and about 16 miles from the mouth of that river. It is the largest river running into the Saguenay, between Tadousac and Chicoutimi.

St. Lewis' Islands, are three in number, and all rocks; the one which lies nearest the mouth of the Saguenay, is the largest, and is about half a mile in length; it lies on the south-west side of the river. The south east end to which in passing by, we gave the name of "Old Way's Point" is about thirteen and a half miles from the mouth of the river. The two others which are much smaller, are on the north-east side, and near the shore.

St. John's River.—St. John's River lies on the south-west side of the Saguenay. It is said there is good anchorage here for all sorts of vessels. On its banks and near its mouth, there is about a square mile of cultivable land. Longitude $69^{\circ} 42'$, and latitude $48^{\circ} 13' 15''$.

Trinity River.—This river is on the south-west side of the Saguenay, and owes its name to three large headlands on the shore of the Saguenay, and on the north side of the place where it joins that river. It is in a deep bay, where there is a salmon fishery. It is about half-way between Tadousac and Chicoutimi; for this reason the bay, which lies opposite to it, and was before called *Le Ruisseau de la Trinité*, was called by the Expedition, *Half-Way Bay*.

La Descente des Femmes, is a bay on the north-east side of the Saguenay, at the head of which is a small rivulet. It lies about 42 miles from Tadousac, and owes its name to a melancholy adventure of some indians, who were reduced to the last extremity by hunger, while employed in hunting, and finding themselves in this necessity, sent their squaws in search of assistance: the squaws came out of the woods at this place. The tide rises here about 17 feet. Longitude $70^{\circ} 11'$, latitude $48^{\circ} 22' 9''$.

Ha Ha Bay, is on the left side of the Saguenay, in ascending, and so perfect is its resemblance to the main channel of the river, that many

travellers have been misled by it. Opinions differ with respect to the origin of its name, for which reason I shall say nothing of it. It runs about nine miles inland, and is as wide as the Saguenay.

Chicoutimi.—This is the Factory of the King's Posts' Company, and the only trading post on the Saguenay. It lies about 58 miles from Tadousac, on the left bank, and at the junction of the river Chicoutimi with the Saguenay. There are four buildings at this post, reckoning the church or chapel. A Missionary comes every year in the months of June and July, and passes some time here, as at Tadousac. He remains at the two places together, about six weeks. The soil here is blue clay, and tho' there are some rocks here and there very fit for cultivation. Nothing is now grown there but potatoes and vegetables for the use of the house only and they fetch hay for the cattle from a place nine miles below Chicoutimi, on the left bank of the Saguenay. The tide rises here 16 feet perpendicular, at spring tides. We came as far as this place in the schooner, and there is no doubt but square rigged vessels might come here. Longitude $70^{\circ} 34'$. Latitude $48^{\circ} 24' 37''$. Variation of the Compass $17^{\circ} 12'$ west.

Presq'île.—The Peninsula formed by the grand outlet on one side, and by the river Chicoutimi, the lakes Kenuagomi, Kenuagomishish, the Alder River, La Belle Rivière, the Kushpahigan and part of lake St. John, on the others, lies between $70^{\circ} 34'$ and $71^{\circ} 29'$ west longitude from Greenwich, and $48^{\circ} 14' 38''$ and $48^{\circ} 34'$ north latitude. The soil, which is a loam, is in general well adapted for a settlement. The timber is red pine, cypress, white birch, sapin, white spruce, black birch, &c., all of moderate size, except the pines, which are scattered here and there, and are very large, but generally appearing of bad quality. The land, when you have once ascended the bank, is level; and if a settlement were formed here, beginning at Chicoutimi, which should always be the central point, a road might, by degrees, be opened, communicating with lake St. John, and this would be so much the more easy, from the circumstance of there being but one river to cross, and which (except during floods) may be forded. The Peninsula contains about 245,000 acres, and would consequently hold 2450 inhabitants, allowing 100 acres to each. The climate is at least as mild as that of the neighbourhood of Québec, but the spring is about 15 days later than at the post at the River Metabetchuan, on lake St. John.

River Chicoutimi.—The River Chicoutimi is one of the outlets of lake Kenuagomi, and after running about $7\frac{1}{2}$ miles in a south-west course, falls into the Saguenay near the post of Chicoutimi, about 58 miles from the mouth of the latter river. There are seven portages on this river, between Chicoutimi and lake Kenuagomi. The banks on each side of this river are not above 30 feet in height. But at a distance of about 10 chains from the first, there is a second bank of about the same height. The timber and soil are the same as in the peninsula.

Portage of Chicoutimi or Shekutimish Caputagan.—This portage, which is two miles in length, and on the left bank of the Chicoutimi, is very level, with the exception of a gulley, formed by a small rivulet, near its south-west end.

Portage de la Poussiere, Meia Caputagan, lies 62 chains from the portage of Chicoutimi, and is nine chains in length.

Portage de l'Enfant, Washkow Caputagan lies 33 chains from the portage de la Poussière, and is 7 chains in length. It owes its name to an accident which occurred about 50 years since to an Indian, who in passing this portage left a young child in his canoe, which was carried off by the current and passed over a very considerable fall without upsetting, to the great surprise of the father and of all who have seen the place.

Ile au Sepulchre, lies about 4 miles from the portage de l'Enfant, and derives its name from having been the burying place of two persons who had been drowned.

Beau Portage, Milow Caputagan, is six hundred and nineteen chains from the portage de l'Enfant, and thirteen chains long.

Portage de l'Islet, Ministouki Caputagan, is ninety chains from the Beau Portage, and 33 chains in length. It is so called, from an Islet in the middle, which is longer than the portage. A canoe may come down these rapids.

Portage des Roches, Assini Caputagan, is one hundred and forty-eight chains from the portage de l'Islet, and when the waters are high is about twenty chains long, but much shorter when they are low.

Lake Kenuagomi.—A lake about 23 and a quarter miles long, and about half a mile wide. Its banks on the south are in some places rocky cliffs, but rise much more gradually on the north side, with the exception of two or three rocky headlands. At the west end of this lake, there is another called Wiqui, of a round form, and about 12 chains in diameter, communicating by a canal, from 12 to 15 feet wide and 3 chains long.

The River Pastagoutzy is another outlet of Lake Kenuagomi, by which it discharges its waters into the Saguenay, about 11 miles to the north-west of Chicoutimi. It is said that it passes under a mountain in its course, but I have not seen it.

Cushcouia Bay.—In this Bay there is a very pretty river, which we

called Baddeley's River, which is supposed to connect the two lakes, Kenuagomi and Kenuagomishish, a fact, which if true, can only be ascertained in winter, as the river is choaked with alders.

Portage Kenuagomi, or *Insula Formosa* or *Belle Isle*, is 96 chains in length, and lies on the height of land which separates lake Wiqui and Kenuagomishish.

Lake Kenuagomishish or *Little Lake*, is about 6 miles long, and from 12 to 30 wide; its banks are about the same as those of lake Kenuagomi, on the north side. At the entry of this lake is the River Baddeley, or supposed communication between the lakes, and thirty chains further on the same side lies Lake Nixon, 36 chains long and 10 wide; the banks on all sides of which do not exceed 25 feet in height, and the land of superior quality, being all strong land.

Rivieres des Aunais, or *Pashikaounishish*.—The River des Aunais is the outlet of lake Kenuagomishish, by which it discharges itself into La Belle Rivière; and although it is called nine miles long, if followed in its windings, it is in reality only 3 miles in a straight line; it is about 1 chain wide. There is but one canoe portage upon this river, which is 25 chains long, and lies about a mile from lake Kenuagomishish, and from thence to the Belle Rivière, there is a path which is preferred by those who have no duty to perform in the canoes, on account of the river being much obstructed by alders, and that canoes pass through it with difficulty.

River Kuspaigan, (a place which is ascended).—The River Kuspaigan begins at the place where the river des Aunais meets it, and goes as far as lake St. John. Below the point of junction it takes the name of La Belle Rivière. Its length, if its windings are followed, is about seven miles and three quarters, and it is about 2 chains wide. About half-way, in going to the lake, there is a portage of about 18 chains long. It is the most difficult, and gives the hardest work to the carriers, of all the portages between Chicoutimi and lake St. John.

Lake St. John, or *Peaquagomi* (Flat Lake).—Lake St. John is 57 and a half miles from Chicoutimi, and between $71^{\circ} 29'$ and $72^{\circ} 9'$ west longitude, and $48^{\circ} 23'$ and $48^{\circ} 32' 37''$ north latitude; it is about thirty miles long, by twenty or thereabouts in width, and ninety miles in circumference. Eight rivers, nearly all of the first class fall into this lake, viz.: the Peribonea, the Mistassini, the Ashuapmousoin, the Ouigouatshouan, the Ouiguatshgamish, the Metabetshouan, the Kuspygish and the Kuspaigan. With the least wind from the north-west, the waves run prodigiously high, which renders the canoe navigation very dangerous here. The waters also rise very rapidly in time of rain, and fall almost as suddenly, particularly when the wind is north-west. There are two outlets, by which this lake dis-

charges itself, but correctly speaking, they should be reckoned as one, since they are united, about 2 miles from the lake, and then take the name of the River Saguenay; besides the group of islands opposite the outlets, and which we called Dalhousie Islands, there are two others on the south side of the lake, Adder Island, (Manitouministuck, which means in the indian language, the Island of Evil Spirits) and Big Island. It is said that there are great numbers of adders on the former. They lie about 2 miles from the main land.

Peribonea, (singular river.)—This river may be said to be the most beautiful, and that which offers the most advantageous site for a settlement of all the rivers in this part of the country. Its banks are level and wooded, with a mixture of aspin, white birch, red and white spruce, sapins and scattered red and white pine, with cypress. But in my humble opinion, no conclusion ought to be drawn from the timber, for we find equally in all parts of the country, aspin, white birch and pine (timber found generally on poor lands) growing upon clay, rock and sand, in the same manner as we find aspen growing in abundance upon lands lately burnt and not under cultivation, in the district of Quebec. I am strongly induced to believe, that this is one of the original causes in the present instance. The higher we go up this river the better the land becomes, and had it not been for the unlucky accident recorded in my Journal, I should have ascended it as far as the eastern mountains, which are said to be about 90 miles from its mouth. But if we suppose the extent of the cultivable land on this river, to be only 75 miles, and that two ranges of concessions were established on each side, there would be room enough for near two thousand inhabitants, allowing 100 acres to each. The mouth of this river is on the northernmost point of lake St. John, viz.: in latitude $48^{\circ} 42' 47''$, and its course is from the east north-east; it is about 45 chains wide, and the current is moderate, as far as the falls, which are about nine miles from its mouth. These falls are three in number, and above them is the lake D'ahaouiloo, about 4 miles long and one wide. There are many islands at the entrance of this lake, and beautiful points of flat land on the south-east side. A pretty little river, called Rum River, empties itself into the lake, on the north-west side. Variation $16^{\circ} 40'$ west.

David River, runs from the north and empties its water into the Peribonea, 3 miles and $\frac{1}{2}$ from the lake, on the right bank, and appears to be navigable for canoes, for a great distance. It continues about 10 chains wide, as far as the first portage, which is about nine miles and a half from its mouth.

River Kocouatimi.—This is the only river between the grand outlet and the Peribonea, and of very little consequence, being much obstructed—which makes it very difficult if not impossible to ascend. Variation $16^{\circ} 40'$ west.

Musk-Rat River, is a branch of the Peribonea, which comes out miles below south of the main branch, and is the same I have marked in my plan, as *Le Petit Bras*. It was called *Musk-Rat River*, on account of the abundance of these animals in it.

River Mistassini, deserves in many respects the name given it by several geographers, of *Sand River*, since for nine miles, which I went up it, not only the banks of the river are of sand, but the sand banks in several places cross the channel. It is about three miles wide at its mouth, including a group of islands, between which there are a number of channels, which might lead a traveller, who did not know the country, into error; but on the north of these islands as above them, the channel is not less than a mile and a half in width. The sands which are brought down by this river, render the lake so shoal, that there are scarcely three feet of water, at a distance of three miles from the shore opposite to its mouth; the latitude of which is $48^{\circ} 40'$.

Asuapmousin or *Asuap*, (The Indians' Ambush,) is a river of the first magnitude, which falls into lake St. John, and is about a mile wide. The Company of the King's Posts have a trading post on it about 15 leagues from its mouth; it is one continued rapid, all the way from the post to its mouth. On the left side of its entrance there are several islands covered with brush.

River Quiatshuan.—This river runs from the west, and is in latitude $48^{\circ} 27'$ north, and longitude $71^{\circ} 58'$ west. About a mile from its mouth there is a beautiful fall, which may be seen from the opposite side of the lake.

River Metabetsuan.—The River *Metabetsuan* is in latitude $48^{\circ} 23' 12''$, and is the only place where the Company of the King's Posts have a post for carrying on the Indian trade. The Jesuits had formerly an establishment here, with a certain quantity of cultivated land, but no traces of this settlement are now to be found.

As the object of the Expedition and of the Surveyors, was in particular to ascertain whether this part of Lower Canada was fit for the formation of settlements, I shall not finish without remarking to the friends of agriculture, that the Peninsula which extends from the post of *Chicoutimi*, as far as lake St. John, and both sides of the river *Peribonea*, which I have explored, deserve that settlements should be made upon them, as well on account of the quality of the soil, as the mildness of the climate, which is superior to that of the neighbourhood of *Quebec*; and by commencing at *Chicoutimi*, which should always be the central point of communication and trade between the proposed settlements and *Quebec*, roads would soon be opened as far as lake St. John, which would facilitate the communication with the settlements, to be

afterwards formed on the river Peribonea and at other places on the lake, of which I have made no mention, as not considering them within my province.

And now, although fully convinced of the imperfection which will be found in the account of different places, &c., I have attempted to give in this Appendix, I shall nevertheless close it, begging at the same time your permission to subscribe myself with the most profound respect,

Gentlemen,

Your very devoted, and

Very obedient servant,

(Signed) J. HAMEL, Surveyor.

METEOROLOGICAL TABLE by the same Surveyor.

1828	Morning	Noon	Evening	Remarks.
August				
6	East	(a) East	East	(a) As it was impossible to discover the exact point in which the wind was, I shall only make use of the two points, East and West.
7	"	"	"	It rained in the night
8	West	West	Calm	
9	"	"	West	
10	East	East	East	Heavy rain the whole night
11	"	"	Calm	
12	West	West	"	
13	Calm	East	West	Showers during the night
14	East	Calm	Calm	Light showers during the whole day
15	Calm	"	"	Cloudy weather
16	West	West	West	Showers during the day
17	West	"	West	Rain the whole night
18	"	"	"	Steady rain from noon till the following morning
19	East	West	West	Showers at noon
20	West	"	"	
21	"	"	"	
22	"	"	"	
23	"	"	"	
24	"	"	"	
25	"	"	"	It blew hard the whole day. A shower in the evening
26	"	"	"	
27	"	"	"	
28	"	"	East	Very heavy shower in the evening
29	"	"	West	Cloudy weather
30	"	East	East	
31	"	West	West	Clear weather
Sept.				
1	East	East	East	Cloudy weather
2	West	West	West	Rain the whole day
3	"	"	"	
4	East	East	East	Very heavy rain the whole day
5	East	West	West	Rain till noon
6	West	"	"	Fine weather
7	"	"	"	It was cold in the evening
8	"	"	"	Rain from 10 o'clock till the evening
9	"	"	"	Fine weather
10	"	"	"	Fog in the morning
11	"	"	"	Very strong wind
12	"	"	"	
13	"	"	Calm	" " "
14	"	"	West	Cloudy the whole day. Aurora Borealis
15	"	"	"	
16	"	"	"	
17	"	"	"	
18	"	"	"	Fine weather. Aurora Borealis
19	"	"	"	
20	East	East	East	Fine weather
21	"	"	"	do. very warm
22	West	West	West	do.
23	East	East	East	Rain this afternoon
24	"	"	"	
25	"	"	"	
26	Calm	West	West	Strong wind
27	West	"	Calm	
28	Calm	Calm	"	
29	"	"	"	
30	West	West	West	Very strong wind
Oct.				
1	"	"	"	
2	East	West	West	Rain till noon

JOURNAL of the ST. MAURICE EXPLORING PARTY, one of the Expeditions fitted out under Commissioners appointed by Government to carry into execution an Act of the Provincial Legislature of Lower-Canada.

RECEIVED through the Surveyor General instructions from the Commissioners, Andrew Stuart and David Stuart, Esquires, appointed by Government to carry into execution an Act of the Provincial Legislature of this Province, bearing date 21st July last, to proceed to Lake St. John, by traversing the Country from the St. Maurice River, to explore a certain portion thereof, and return by the Saguenay to Quebec.

Having accordingly made preparations for that service, I embarked on board the steam-boat, Chambly, on Monday the 21st July, at half after 7 o'clock, P. M., where I was joined by Mr. Gouldie of the 66th Regt., and by Mr. Davies, who volunteered to partake of the toil, privations and hardships that might be expected would attend so adventurous an expedition.

Tuesday, 22d. Landed at Three-Rivers on the following morning at half after 9 o'clock. Called on Mr. Bayden, the Agent of Mr. Lampson, in the service of the King's Posts Company, who directed me to the canoe that had been provided for the expedition, and made agreeably to the directions of the Commissioners.

Considering the tract of Country the St. Maurice Expedition were about to traverse, the numerous rivers, small streams, to be ascended or descended, and the many carrying places or portages likely to be crossed, besides the uncertainty with regard to the position of or distance to Lake St. John, and hence the uncertainty of the time required to effect the traverse across the country, rendered it highly incumbent upon me to take such a canoe as would be sufficient for the transport of a party consisting of not less than eight individuals, with the stores necessary for supplying them for a period of not less than one month, while at the same time not so large as to become a source of delay in the portages.

The one therefore now furnished, although of judicious dimensions to answer the latter object, I conceived nevertheless inade-

quate to bear the party and provisions together, and consequently an additional canoe of inferior size was provided for the Expedition.

The next step to be pursued and that of considerable moment towards prosecuting the service, was the expediency of obtaining from the Indians of the Algonquin and Tête de Boule nations, hunting along the St. Maurice River and its tributary streams, information respecting the most eligible route to Lake St. John. Several Indian families were assembled at the passage a short distance out of town, from various parts of the country, to receive the annual Government presents, whither I proceeded with Messrs. Gouldie and Davies, and accompanied by Mr. Bayden. Owing to many of the natives being in a state of inebriety or were in a profound sleep, I was precluded for the present obtaining the information I sought for. Meanwhile, one Bte. Crête, a Clerk in the service of the Company, who appeared intimately acquainted with the St. Maurice, as far as Obiguan, said he knew not of any communication or route to Lake St. John other than by the River Kesikau, which falls into the St. Maurice above Mont au Chêne, which is situated about 300 miles above Three-Rivers, the head of that river being connected by portages and lakes with the River Assuapmeusoin, which falls into Lake St. John.

This route, although probably a very good and recommendable one, I conceived must however carry me some hundred miles to the north of Lake St. John, which would in a manner defeat the object of ascertaining the nature of the land between the north shore of the St. Lawrence and Lake St. John, in the Saguenay country. I therefore sought some hunters along the streams that discharge themselves into the St. Maurice, about the posts of La Tuque, and was accordingly referred to one Bastonais, a hunter on the river which bears his name, and recommended as well acquainted with all that part of the country through which lies the extensive hunting grounds that belong to him and his family.

He clearly described and delineated in the usual Indian manner, on a piece of bark, the route by the Bastonais River, by carrying places and lakes, to the waters which empty into Lake St. John. The only difficulty to be apprehended would be the necessity of clearing the portages for a large canoe which are otherwise calculated for the small Indian canoe of $2\frac{1}{2}$ fathoms generally.

Satisfied of this route, being far the most preferable than by Mont-au-chêne for various reasons, I did not hesitate to decide in

its favour. The dark clouds to the SW portending some approaching storms we immediately returned to town.

Wednesday, 23d. This day, the additional canoe intended for the Expedition, was procured from the Indians at the passage or ferry, and the son of the Indian, Bastonais, a young lad, was engaged as a guide through his fathers hunting grounds, and finally matters put in a state of readiness to proceed the next morning, should the weather permit.

Thursday the 24th. At half after 9 o'clock, A. M. the St. Maurice Expedition set out from Three-Rivers, the largest canoe containing the bowman Vivier, the helmsman Jean Villeneuve, Jereau, middle paddle, and the guide, young Bastonais, Mr. Davies and myself, and the greater part of the stores, &c. The small canoe contained a bowman, Décôteau, and Jean Bigot, helmsman, with Mr. Gouldie and the remaining part of the baggage, &c.

Stopped at the passage which is about a mile up the river St. Maurice for a sketch of the route which the young guide's father had prepared for him, after which we continued our course up the St. Maurice, keeping in with the shore to avoid the force of the current—passed a few settlements of the Seigniori of Cap de la Magdaleine.

The land, more particularly on the west bank, partakes greatly of a sandy soil clothed with white pine, spruce and white birch. Occasionally, a few spots of rich foilage diversify the sameness that pervades the banks of the river. At one of these, by the side of a small stream descending from the hills that here gently slope to the river, we stopped for dinner, after which we pushed from shore, and the voyageurs struck up their characteristic song.

Observed no material change of soil or timber. The banks rise more boldly and to a considerable height on approaching the Forges situated on the south-west bank about 9 miles above Three-Rivers. There we landed, while the voyageurs conveyed the canoes up the rapid round to Pointe à la Hache.

This extensive and valuable establishment of the Forges, the property of the Honble. Matthew Bell, Esq., is calculated by its situation, locality, and the great iron works carried on here, of becoming a place of much importance.

Joined the canoes at the point, where I directed the camp to be made, which was effected, notwithstanding the confusion arising at a first encampment.

Tuesday, 25th. It rained a great shower during the night, which only ceased this morning.

The River above Pointe à la Hache being rapid, and considered intricate for deep ladened canoes, we determined on walking to the falls of Gabell, a distance of about six miles.

Excepting a few rising grounds the road lies over a tolerably level tract. The land varies much in its quality; where the sandy loamy soil prevails it is timbered with pine, fir, aspin, spruce and white birch; where that is of a clayey nature, the maple, beech, balswood, and yellow or black birch is generally interspersed. In one place I noticed a white spruce or tamarack swamp, a description of bog shaking earth, in which are generally found the ores used at the Forges.

Reached the foot of the falls of La Gabelle, during a heavy shower, to which discomfort may be added the almost intolerable annoyance of the sandflies and musquitoes. Shortly after our arrival, the voyageurs and canoes arrived as the weather cleared up, who in a few minutes made a cheerful fire to dry our drenched clothes.

The falls of La Gabelle, which are about 25 feet elevation, descend through a partial contraction of the river, possessing little of the picturesque, although interesting to geologists, as besides the limestone abounding here, it is said quantity of sandstone and other minerals are to be found in its vicinity.

The land about the falls is of arable quality, containing however much gravel intermixed with the loam beneath the vegetable mould.

The provisions, baggage and canoes being carried over the portage, which is about 1550 yards, we embarked into the canoes at the upper landing, and proceeded on to the falls of the Grai, which are about half a league above La Gabelle, where we encamped at mid portage. The Grai, which can be considered but a mere cascade, are separated into several channels by a few islands clothed with a rich foliage, and present a pleasing effect from

the lower end of the carrying place. The land exhibits very favourable appearances for settlement to considerable extent.

Saturday, 26th. Effected the transport of the stores and canoes, &c. over the portage, which is about 1030 yards long, and lays through a good quality of land, the soil of which is a dark rich loam with a bed of white clay beneath, the timber thereon is mixed, being cedar, black or yellow birch, balsam, fir, maple and white pine.

Leaving the Grais, the land improves, and the banks of the river present on either side by the rich verdure of the foilage, particularly on approaching Pidgeon Island, which partakes of the alluvial, an excellent tract of country; the elm, basswood, beech and birch, are intermixed with the spruce, balsam, pine and cedar.

Made Pointe Chevalier, about a league and a half above the Grais, and crossed a carrying place on the west bank, of 150 yards, while the voyageurs poled the canoes up the strong rapid and current that runs by the Pointe. Thence proceeded up the Basin Shawenegan, until coming opposite to the narrow pass or chasm which forms the channel of the St. Maurice, we had a partial view of the stupendous fall of Shawenegan, a sketch of which I drew upon the spot, although an imperfect one, yet may convey some idea of the grandeur of the subject it offers to the naturalist or geologist. Landed at the head of the bay, where I directed the encampment to be made.

Few falls or places indicate the marks of some extraordinary catastrophe or convulsion of nature as the Shawenegan: for that its present channel is the effect of some former event or fracture in the vertical strata, may appear pretty certain. If we consider that above the falls the general course of the St. Maurice is from the east towards the upper landing, that the distance between this and the lower landing is but 341 yards, forming thereby a peninsula composed of calcareous strata, with a thick surface of clay and loam, that could I believe have been easily penetrated, and it is equally surprising that the river should thence suddenly bend its course towards the south-east, which, divided into two channels, precipitates itself near 150 feet perpendicular, and rushes with terrific violence against the face of the cliff below, which is opposite the principal fall or channel below, which it unites with the inferior one, and thus so great a body of water forces its way through a narrow passage not more than thirty yards wide. I do not doubt however but in the course of time the small peninsula will form an

additional island, and that the St. Maurice will pour down its waters near the mouth of the Shawenegan River. But art would effect a canal at a trifling expense in comparison with the advantages to be derived therefrom in the event of an extensive settlement being made upon the St. Maurice.

Made an excursion up the Shawenegan River, by some called Manigoufite, the foot of a rapid. The land on either side of this river is of an excellent quality. The timber on it is of the mixed kind, as maple, beech, fir, pine, black birch, &c.

Sunday, 27th. Observed equal altitudes and azimuths of the sun, from which I deduced the latitude $46^{\circ}.30'$, and the variation of the compass 10° . west. At half after 2 o'clock, P.M. effected the transport of the baggage, stores, canoes, &c. across the Portage, which lies over the peninsula, ascending first sharply to the summit of the hill, then descending immediately to the landing, where we embarked. The river is here interspersed with several islands clothed with rich foliage, among which we discover the elm, the birch and the maple. The banks slope gently to the river, and present eligible seats for settlement; the soil is generally loam with clay bottom, timbered with spruce, fir, cedar, birch and pine, occasionally some elm. Landed at Snake Point, from whence we discovered the Portage des Hêtres, distance near four miles, which we reached, and encamped at half after 5 o'clock, P.M.

Monday, 28th. The Hêtres can be considered more a rapid than cascade, which are frequently shot down with large canoes by expert bowmen, who must be well acquainted with the course of the channel, which the voyageurs term *fil d'eau*. This place lies about $6\frac{1}{2}$ miles N. E. of Shawenegan, which latter is about 7 leagues N. W. of the mouth of the St. Maurice.

Surveyed the Portage, which is 616 yards to the upper landing, partly over some indifferent land somewhat stoney and timbered with beech, fir, maple, pine and hemlock, some birch and cedar. The men effected the carriage of the luggage, &c. by half after 9 o'clock, A. M., at which time we left the Hêtres. The river then keeps its general north-easterly course running down with great swiftness, which compelled us to keep close in with the shore. Its banks assume a bolder aspect, the right is much broken, and the soil is light sandy loam, generally timbered with spruce, pine, birch, some cedar and balsam.

Reached the Rapid du Rocher, at which place we got out of the canoes which were poled up the rapid, and we walked about 100 yards and re-imbarked into the canoes after experiencing a heavy shower which fell in torrents upon us. From thence we reached the falls of La Grande Mère, about two leagues above the Hêtres. Nature, without giving to this fall the sublimity or the heighth of the Shawenegan, has collected a pleasing continuation of objects to reward the traveller for his pains of crossing portages and venturing in rapids, &c. Two islands occasion three separate falls in the whole width of the river, which is here about 15 chains broad, each varying from the other. The eastern fall and the most considerable for the body of water which falls a perpendicular pitch of about thirty feet, lies between the eastern shore and the large island which is covered with the evergreen, spruce and fir, and is a pretty curtain fall.

The centre fall is the most insignificant of the three, and falls down an inclined plane receding about 20° . from the vertical, which together with the western fall or cataract is undermining the second and small island, which is a large mass of rock whose summit is partly grown with spruce, fir and white birch.

Paced the portage which is on the western bank, lying E.N.E. and 330 yards over a middling description of land timbered with spruce, fir, white birch and pine.

Dined for the first time on a description of fish, called by the voyageurs *whahatoosee*, a fish peculiar to this part of the river.

The canoes being loaded we proceeded on. The river keeps its general north-easterly course. Passed a river on the right bank which rises from three lakes in the interior, and notwithstanding the strong current against us we reached the Petites Pilles, about $2\frac{1}{2}$ miles above the Grande Mère. Encamped at 5 o'clock, and sent two men back in the small canoe to the last portage for the sponge, a very useful and indispensable article for bailing, which had been carelessly forgotten by them.

The Petites Pilles, which should be more properly called the Petites Filles, can be considered but a rapid, however too dangerous and difficult to be descended by canoes, although some voyageurs have ventured down at great risk, successfully.

The land I observed preserves the same features as below the Forges—a sandy light soil, as likewise the prevailing quality of

timber on the banks of the river, as birch, fir, spruce, and white pine. This night I observed the meridian altitude of the moon, and the transit of several circumpolar stars, the latitude therefrom and the variation of the compass 10° - $15'$ west. At about 8 o'clock the men returned with the sponge.

Tuesday the 29th. Surveyed the portage which lies on the west bank of the river, and is 264 yards long. Thence proceeded in the canoes, passed a cluster of 5 islands which could afford excellent pasture if cleared. Came opposite to the mouth of the considerable river on the right bank, which connects by 11 lakes and as many carrying places with River Croche, and thence to La Tuque, from whence the St. Maurice bends its course W.N.W. to the carrying place of the Groses Pilles, which is about $4\frac{1}{2}$ miles above the Petites Pilles.

The land here becomes quite rugged and broken, the soil sandy and unfit for the purposes of agriculture, producing only, particularly on the east bank, but a stunted growth of birch and fir.

The stream runs with considerable swiftness, and round the points amounts nearly to a rapid. The Groses Pilles are but a cascade of 15 or 20 feet in height, yet a carrying place is unavoidably necessary to be made of 32 yards, from which looking up the river a new scene opens at once to the view; the right bank rises into high perpendicular cliffs of 250 to 300 feet, one in particular much resembling Cape Diamond. The rock of which the cliff is composed is chiefly primeval granite, dipping about 45° N. E. A few shrubbery grow in the crevices of the rock, while its summit is thinly clothed with fir, spruce and small white birch.

Stopped at noon for a meridional altitude of the sun, which however becoming overcast with clouds, I was deprived of an observation.

Passed L'isle aux Fraises, which is a fine island near half a mile long. The river here, which is about 15 or 18 chains broad, keeps a general N.N.W. course, the land on either bank assuming in every respect a mountainous aspect, offering no fitness for agricultural purposes or for settlement, at least on the confines of the St. Maurice and for several miles in the interior, as may be occasionally discovered from the river.

The current runs down with surprising swiftness, and required

the effort of the party to reach a meadow on the right bank, for encampment, below Birch island.

Wednesday, 30th. Came to the River Metinac, which is a fine stream discharging itself on the eastern bank of the St. Maurice, about eleven miles above the Grandes Pilles, from whence the general course is N. N. W.

This river communicates by portages and lakes with La Tuque. The St. Maurice there bends its course W.N.W. to the Island and Rivières des Cinqs, about ten miles above, opposite the lower Matawin Island, where there is a route by 5 lakes and 4 portages to the great Lake Matawin, which is the source of the river of that name, twenty chains below the mouth of which we encamped.

The banks of the river with few exceptions are broken and mountainous and unfit for settlement, and the only descriptions of timber to be seen are the white birch, spruce, tamarack and small red pine, some cedar and hemlock. In many places the shores are iron bound, and the stream very rapid. In one place called the rapid Manigouse we got out of the canoes to enable the voyageurs to reach the head of the rapid.

Thursday, 31st. Set out this morning at half-past 8 o'clock. Above the upper Matawin Island, which is about $\frac{1}{4}$ of a mile, and very good land, a small stream called the Cat in Algonquin, meaning Pole Cat, enters on the western bank. The land is still mountainous on both sides of the river, and in every way unfavourable to any prospect of future settlement.

Passed Caribou mountain, which rises near 200 feet, shewing the face of an abrupt granite cliff, by the foot of which runs a very swift current. About three miles above which is Bird Mountain on the same side of the river, its eastern bank. L'oiseau, as it is called, is nearly 250 feet high, the rocks of which the cliff is composed recede about 40° from the vertical towards the N. E.

About half a mile above this mountain, I ascertained by meridional altitude of the sun, the latitude $47^{\circ} 1' 0''$. The general course from the lower Matawin Island to Bird Mountain is north, in a distance of about 10 miles. From thence the general course to L'Isle au Noix is about N. by W. 6 miles, where we encamped. The land on this Island is of good quality contrasting with

the banks of the River which discover, particularly on the western side, nought but hills and barren cliffs of granite. The spruce, fir, white birch, and pine, are the prevailing timber to be seen on the hills.

Friday, 1st Aug. Left the island early this morning and came to the River Batiscan, which discharges itself on the eastern bank. It communicates with the great River Bastican by 5 portages and 4 lakes, from which it derives its name. The first lake is of magnitude, and only about one league from the St. Maurice. The land on the western bank opposite the mouth of the Bastican is particularly bold and abrupt and rises into prominent capes about 200 feet elevation.

From thence we reached the River au Rat, a broad stream on the west bank, between which and the little Rat River an alluvial flat formed by those rivers at the foot of the high mountains, is situated a trading Post of the Hudson's Bay Company. It consists of a store, two dwelling-houses and a very good garden, which furnishes the Post with the necessary vegetables. A dwelling-house is building for the resident agent.

On leaving the Post we were assailed by a great storm of hail, from which we had no means of being sheltered, as we were ascending along the foot of a sand bank of about 70 feet elevation, while the east side of the river continues still mountainous. About a mile above the Post the hills rise to 300 feet, discovering frequent cliffs which dip generally to the N. E. From thence we reached Thunder Point during a heavy shower, which continued throughout the night accompanied by lightning, the loud peals of thunder re-echoing in the mountains with astonishing effect. There we encamped at half after five o'clock.

Saturday 2d. A considerable rapid runs down at the Point which we ascended, and passing several cliffs that rise 200 to 300 feet perpendicular, we made an island called La Pêche, where the Indians and people of the Post of La Tuque frequently resort to for fishing, and abundance of white fish, doré, carp, bass, pike and eels are taken here annually. From this island we reached the mouth of the Bastonais River at 2 o'clock notwithstanding the heavy rain that had been falling since we departed from Thunder Point. The mouth of the Bastonais is about 10 miles above L'Isle au Noix on the east bank of the St. Maurice, whose general course thereto is about N.N.E. The land about it is of a better description, although the opposite banks of the River are still hilly and uncultivable.

Finding it necessary to proceed to the Trading Post of La Tuque, that I might if possible obtain some corroborative information on the propriety of ascending the Bastonais River, I left the depot of stores and the small canoe with two hands at the Bastonais, and taking the remaining hands in the large one we continued up the St. Maurice. It acquired after leaving the islands considerable breadth; its banks, although hilly, are not so broken and rugged as that which characterises them below the Bastonais. From a distance of near 4 miles could be discovered the conical hill of La Tuque, from which it derives its name. Reaching the lower landing of the carrying place at the foot of the cataract, and then walked the portage which lies over a very sandy soil producing abundance of blue-berries, and a growth of red pine, spruce and cypress.

We were very hospitably received by the resident clerk, a young Canadian. Being quite unacquainted with the country he could give us no additional information besides what I already possessed, and there was no person at the Post who could supply his deficiency.

Sunday, 3d. Prepared for equal altitudes of the sun and azimuths, which I effected with much trouble, owing to the annoyance of the sandflies and mosquitoes, which are more plentiful here than other parts of the country, occasioned perhaps by the extensive low ground and marshes that are about the Post, and the extensive meadows among the islands a short distance therefrom. In spring the waters rise to an extraordinary height, as roots of trees have been found in the top branches of large trees, in the meadows and near the Post. The conical hill of La Tuque separates the Post from the Falls, which are about 50 feet. It is principally composed of granite rock, containing quartz, mica and felspar.

The Post La Tuque, which is in $47^{\circ} 18' 32''$ north latitude by observation, and longitude 73.00 west by account, variation of the compass $11^{\circ} .00$ west, is a place of trade for the King's Post Company and the Hudson Bay Company, who have respectively an establishment here which consequently excites a spirit of opposition, injurious perhaps to one or other of the parties, and is ultimately so to the natives by its consequences. The King's Post Company Establishment consists of a store, hangard and two dwelling-houses. The Hudson Bay, of a dwelling-house only, which is however the best building at the Post.

The St. Maurice above the Post is about half a mile broad, and whence can be discovered the River Croche, Vermillion and the North Bastonais Rivers. At the mouth of the latter some very fine doré and pike were taken, and afford an ample supply to the Post. The land in the distance preserves the same mountainous character as below La Tuque, and appears in every respect unfit for settlement.

The winter sets in about the end of October, and the snow disappears and the river is free of ice about the end of May. But the heat of summer is about the same as in Quebec, and the winter is exceedingly cold. The Post of La Tuque, on a general course with the St. Maurice, lies astronomically N.N.W. of Three Rivers, and about 100 miles therefrom as the river winds—agreeably to the following recapitulation of distances disposed in the following Table :

THREE-RIVERS.

9	Forges.															
4½	5½	To Gabelle Portage 550 yards.														
16	7	1½	Grais do 1034 do													
21½	12½	7	5½	Shawenegan 554 yds.												
28½	19½	14	12½	7	Hêtres 616 do											
34½	25½	20	18½	13	6	Grande Mère 336 yds.										
37½	28½	23	21½	16	9	3	Petites Pilles 200 yds.									
42	33	27½	26	20½	13½	7½	4½	Grandes Pilles 32 yds.								
53	44	38½	37	31½	24½	18½	15½	11	Rivière Metinac.							
63½	54½	49	47½	42	35	29	26	21½	10½	Portage des Cinqs & Island.						
73½	64½	59	57	52	45	39	36	31½	20½	10	L'Oiseau or Bird Mountain.					
79½	70½	65	63	58	51	45	42	37½	26½	16	6	Isle au Noix.				
86	77	71½	69½	64½	57½	51½	48½	44	33	22½	12½	6½	Post of Rivière au Rat.			
95½	86½	81	79	74	67	61	58	53½	42½	32½	22	16	9½	Rivière Bastonais.		
100	91	85½	83½	78½	71½	65½	62½	58	47	36½	26½	19½	15	4½	Post of La Tuque,	

Monday, 4th. Left the Post of La Tuque and paced the carrying place, which is 1474 yards to the lower landing, and thence

reached the mouth of the Baftonais River in time for a meridional altitude of the Sun, latitude deduced therefrom, $47^{\circ}-14'-30''$."

At one o'clock, P.M. left the banks of the River St. Maurice and ascended the Baftonais River. Its width varies from 20 to 25 yards, and lays its course through an alluvial tract of good land, the extent of which is limited by the adjacent hills, which intercept the course of the river and occasion a fall of near 130 feet. Came to the carrying place on the left bank, about 30 chains N N.E. of the mouth of the River, (which I shall call Portage No. 1,) which I found to be 325 yards long to the upper landing above the fall, which is formed of three separate cascades. It would admirably answer for a mill seat.

Having got into the canoes we continued our course generally N. N. easterly, the stream very winding and running down with swift current for about $1\frac{1}{4}$ mile, the banks of the river discovering a favorable appearance of its fitness for settlement, although only to an inconsiderable distance from its banks as the mountains follow the general direction of the river. It then suddenly shapes its course S. S. easterly and enters a small lake, in passing which we experienced a heavy storm of hail and rain. The land about this lake is low excepting on the south side, where it rises at a short distance therefrom. The prevailing timber I have hitherto observed, is red spruce, fir, birch, red pine and some maple.

Reached the foot of the long portage, and encamped at 5 o'clock.

Tuesday, 5th. Sent off the men early before breakfast to perform one trip with about two packs each of the stores and luggage to the upper landing, and it was near noon when they returned for the canoes.

Paced the Portage, which I found to be near four miles long, lying through uneven land, in many parts swampy or hilly poor land. The former are very wet and sometimes rocky, timbered principally with spruce, fir, birch and cedar. The hills are timbered with fir, birch, pine, and some maple. The soil is generally sandy or light loam. The upper landing lies on the borders of a small lake about $\frac{1}{2}$ a mile long and a $\frac{1}{4}$ broad. The land of the same aspect as that on the portage.

It was six o'clock by the time the transport of the stores and

canoes was effected. Notwithstanding which I felt desirous of pushing on farther if possible, and we therefore got into the canoes and proceeded across the small lake, from whence by a narrow channel we entered into the great Lake Wagagamacke as the sun was sinking behind the distant hills. The scene it exhibited was truly splendid, and was rendered the more impressive as we paddled over the unruffled surface of this beautiful sheet of water, and the hills echoing the characteristic song of the voyageurs. The occasional shrill cry of the Loon with which this lake abounds enhanced the peculiar interest and wildness of the scene.

The lake appears of very irregular figure, and a part of it extends to the southward. Our course lay to the E. S. E. Its bays are so deep that only passing through is insufficient to form a correct idea of its size. However it can fairly be estimated at a league wide. The landscape is diversified by four or five islands, which all laid to the northward of our course. The land to the S. W. appeared hilly, and in the parts rising gradually from the borders, the timber to be chiefly spruce, pine and birch.

At 8 o'clock we made several islands, which lie at the head of the Lake at the mouth of the Bastonais River, which we ascended to the foot of the rapid and the 3d carrying place, the lake being about 11 miles long.

We encamped by the help of torches, and it was a late hour of the night when we turned in to rest. Observed altitudes of the Pole Star, lat. $47^{\circ}.-6'-8''$

Wednesday the 6th. Fine weather. Early this morning, the stores and canoes were transported to the upper end of the portage, which I found to be 270 yards, lying on a general course E. S. E. over very rocky poor land, timbered with spruce, white birch, cedar, and balswood. The River follows on the right side of the Portage, on which is a cascade of 20 feet perpendicular fall. Embarked in the canoes and continued up the river on a general course easterly to the 4th Portage. The land on its banks low and of a scanty soil, some hills appearing in the back ground. The timber is chiefly tamarack, white birch and pine, some cedar and red spruce.

The 4th Portage is 100 yards long, and we resumed again the Bastonais River which is very winding and narrow, directing its general course about E. by N.

Effected another small carrying place to avoid a stiff rapid, not

however impassable for light canoes. The land although still low is of a better description, and is susceptible of being cultivated.

Entered the Lake called Petit Wagagamacke, and from its outlet shaped our course E. N. E. to the 6th portage. It is surrounded by gentle swells of land chiefly timbered with fir, spruce and pine; the soil of a sandy nature. Its greatest length is about a league and a half and its breadth two miles. The Portage proving very long and rough it became impossible to effect the transport of all the stores, and which was accordingly deferred until the following day, and we therefore encamped on the borders of the Wagagamacke

Thursday the 7th. Set out at 7 o'clock, A. M. and surveyed the Portage, which is one mile and one-third long, traversing a broken rugged tract of land timbered with balsam, pine, poplar, fir and spruce, and a small lake surrounded by the same description of land, the outlet of which falls into the Little Wagagamacke.

From this Lake we came to the seventh carrying place, which is 135 yds, and reaches the borders of Long Lake, which is nearly $3\frac{1}{2}$ miles in length, and in some places about $\frac{1}{4}$ of a mile broad. The land on its borders is hilly and of a sandy and rocky nature clothed with white birch, spruce, fir, and small pine. It lies about N. E. & S. W. and at the head of it is the 8th Portage, 1150 yards long. This Portage leads along the elevation that borders on an extensive tamarack swamp to the southward, to a small pond and the last waters of the Bastonais River. This small pond, the bottom of which is a deep bog, and is surrounded by an immense white spruce swamp, affords a subject for geological speculation. Here are to be found a quantity of large rounded water-worn rocks near the outlet, that are heaped together on the borders of the lake, and that cover the land for a few yards back of it; there is no inlet that could warrant these rocks, which are of granite, with veins of quartz and felspar, to have been washed down by a torrent, many of which are covered with a thick moss. It would, however seem to me that the only way for accounting for their presence is, that the whole of this extensive level tract, which now forms the great swamp, was at a period not very remote covered by water. Here I obtained an altitude of the sun, which gave me the latitude $47^{\circ}-17'-7''$ Having crossed this pond, which abounds with a large description of leeches, we effected the 9th Portage, which is 730 yards, to another small pond of the same nature as the last, being the first waters of the River Bastican. The 10th Portage is thence crossed, which is 550 yds.

through a deep swamp of white spruce and fir, to another lake of near $\frac{3}{4}$ of a mile in length, the land about which is still low and marshy.

Crossed this Lake to the 11th Portage, where we encamped at 7 seven o'clock.

Friday, 8th. It rained during the whole night accompanied with much thunder and lightning. By 8 o'clock the canoes and stores were carried over the portage, which I found to be 530 yards long. The land rising from the tamarack swamp in which we had encamped, and descending afterwards to a marsh in which meandered a small rivulet, and in which the canoes were launched, This falls into another leech pond, at the head of which is the 12th Portage. The land still preserves the character of a general spruce swamp, chiefly of the worse sort of this description of land, being timbered with white spruce and tamarack,

The 12th Portage is 1030 yds. long, traversing the same nature of land to the last lake on the west side of the Bastican, which is reached by the 13th Portage about 800 yards over level land, timbered with spruce, birch and fir.

The River Batiscan, which here the guide informed us is only the north west branch thereof, is about one chain or 22 yards wide. Its banks are low, the soil of which is principally white sand, producing abundance of huckle-berries. The prevalent timber is tamarack, fir and birch, and some pine. The general course from the Inferior Wagagamacke at the Portage, to the Batiscan by the route, is about north-east 11 miles.

Descended the Bastican on a general course south-east for half a league, and landed at the 15th Portage on the north-east bank. The stream flows with a gentle current, and observed a few hills on the south-west shore, at about a mile in the interior, to which this low swampy land appeared to extend. Encamped at this Portage at 6 o'clock P. M. This night we got partridges for our supper, Mr. Gouldie having killed a few, and some of them within a short distance of the camp.

Observed altitudes of the Pole Star; latitude therefrom $47^{\circ}.$ - $19'.$ - $30''$ and variation $11^{\circ}.$ - $45'$ west.

Saturday, 9th. The voyageurs having made one trip with part of the things before breakfast across the portage, found it neces-

sary to clear away with axes for the passage of the large canoe, which occasioned much delay. The carrying place is about nine furlongs in length and lies over a rough tract of land, rising from a wet tamarack swamp up a steep mountain, where we descend to the same level of the former swamp to the borders of another leech pond, lying about N. & S. $\frac{1}{2}$ a mile long. It was noon by the time the effects were carried across this Portage. The rocks I observed thereon were altogether granite and gneiss; the soil is generally sandy or a light loam, on which is a thin vegetable mould.

Crossed the small lake, which is not over 6 chains, to the 15th Portage, the bottom of it is muddy, and is so very shallow that it required several trips to effect the passage of the things, or have grounded, it being ineffectual to use the paddle, which could find no bottom in the bog at several feet depth. The 15th Portage is about 130 yards long to a lake, whose features vary essentially with the last mud lake or pond, yet so very near together. The bottom of this is gravelly and its waters are clear, and are above the level of the last pond, into which a small stream runs from the lake, the outlet being just by the Portage, which effected we joined Mr. Davies, who had preceded us and reached the 16th Portage at the head of the lake. Its figure is much like a bird in its flight, the land about which assumes a bolder character although of no

better fitness for purposes of culture. The soil is sandy, and the hill or borders where we enjoyed our frugal repast is covered with blue-berries, which proved an additional luxury after the cold pancakes which were served us for desert.

Crossed the 16th carrying place, which is 1100 yards, and lies through middling good land for a certain distance, the sand being intermixed with loam beneath a thick bed of vegetable mould; the timber is spruce, some black birch, cedar, fir and balsam. On approaching a small lake wherein we launched the canoes, at the end of the Portage the land becomes again wet and swampy, timbered with spruce and fir. Descending steeply to the border of the lake about which the land is generally low and grown with spruce and fir.

This lake being crossed we effected the 17th Portage, which is 290 yards, and dividing the waters flowing respectively into the N. E. branch and N. W. branch of the Bastican, and consists of an extensive swamp to the borders of a lake, the first waters of the N. E. branch of the Bastican, which is about a mile long.

The land about this lake is low, at the head of which is the 18th Portage, which is but 150 yards to the borders of Lake Edward; a fine rapid stream follows the portage and falls with a cascade of 15 feet into Lake Edward, offering a propitious site for a mill feat. Here we encamped at half-past 7 o'clock, somewhat late for the preparations that were rendered necessary to be made against the approaching rain, which had been falling, although slightly, at various times in the course of the day.

Sunday, 10th. It rained the whole of the day, so that we could not venture to proceed on.

Monday, 11th. The weather clearing up, by 9 o'clock A M. we set out from the 18th Portage at quarter after 10 o'clock. At about a mile therefrom the lake acquires greater dimensions extending E. S. easterly. Our course lay however through a narrow channel formed by the S. W. end of the Great Island and the main land, and keeping along the north west borders of the lake we came to a considerable expansion of it, in which lies another island of great extent, to the north-west of which we passed between it and the N. W. borders, where we steer for Dinner Point, a distance of about nine miles by our course from the last portage. The land thus far rises gradually from the lake into gentle swells, timbered with fir, spruce, white birch and pine. The soil appears a mixed loam, and I believe some parts of this portion of Lake Edward would be susceptible of improvement.

Lake Edward, which derives its name from an Indian hunter of Bastican, may be said to form two lakes, owing to a large Island which extends nearly the whole length of it, and which in some places is about three leagues broad. The greater sheet of water, by the account of the guide, is *that which we passed on the north-west passage*. The south-east is used by hunters coming from Bastican.

Having dined at the Point, where by the recent marks on the trees and encampments, around which were scattered bear skulls and fish bones, several canoes with Indian families had rested for a hunting season—we continued our progress on the Lake which keeps a more direct course. The land appears more prominent and its shores in many places rocky and barren. The wind being fairly abaft a sail was set to each canoe, which pushed them on at the rate of six miles an hour, which ceased as we reached the N. E. end of the Great Island, having previously passed several pretty Islands that form a pleasing landscape with the neighbouring hills.

Having passed the island and doubled the Presqu'isle, the Lake contracts to a quarter of a mile and the land becomes more mountainous and broken, rising in many places from an iron bound shore into cliffs of granite; the timber on these mountains being fir, tamarack, and small white birch. At the head of the Lake, which is about nine miles from Dinner Point, a stream of about 18 yards wide enters the Lake, which we ascended for about a mile, a gentle current through an alluvial soil, which extends to the foot of some high hills of the same cast and aspect as the last mentioned, and came to a pretty lake, surrounded by mountains of no favourable appearance for settlement. Having crossed it to the Portage No. 19, we encamped at 7 o'clock.

Tuesday, 12th. The voyageurs very early effected one trip with the luggage over the Portage, and on their return cut away several trees that would interfere with the carriage of the canoes.

This carrying place, which is 500 yards, leads to a lake whose waters flow eastward into the N. E. branch of the Bastican. The land about it is mountainous and rocky.

The 20th Portage, 400 yards, passes over a mountain, from which we descend to an insignificant stream forming the N. E. branch of the Bastican, which is ascended for about 170 yards to the 21st Portage.

The general course from the N. W. to the N. E. branch by my route is about E. N. E. 30 miles. The latter which runs S. S. westerly lies very nearly on a level with the former, as the difference is not sensible without the assistance or help of the Barometer. The 21st Portage which is but 140 yards terminates at a small lake lying in about the same locality as the leech Ponds, to which it is very similar, the land about it being low and swampy.

Passing this pond, the 22d or rocky Portage is thence crossed, which at about half-way is intersected by a rapid stream which is crossed, the whole length of the portage being 530 yards to the landing and river running to the south-west. Here I found by observation the latitude to be $47^{\circ}.29'.45''$.

At a short distance from the Portage we enter upon a small lake, which contracts for about half a mile, then expands again on approaching the 23d Portage, from whence the lake increases

again in its dimensions in an easterly direction, but our course laid northward. From the 20th Portage the general character of the land is an extensive and tamarack swamp, and with some pains we could find a dry landing at the 23d Portage.

We now left the last waters of the Bastican, and traversed on this portage a tolerably level tract of land which is chiefly covered with a spruce swamp and reaches the borders of another leech pond and the first waters of the North Bastonais River, which empties itself about half a league above the Post of La Tuque, and has been hereinbefore mentioned.

The Portage proving long, being about $1\frac{1}{4}$ mile in length, and finding it impossible to encamp in the swamp which is a description of shaking earth or bog, the transport of a portion of the stores was deferred for the following day, and we crossed the pond to the 24th Portage, which lies at the outlet that runs rapidly to the northward. Effected this Portage, which is 375 yards, and encamped by the side of a stream which descends from the hills and falls into the lake at the Portage.

The land passed over this day is totally unfit for settlement, possessing the extremes of low level land and abrupt steep hills or acclivities. The rock of which they are composed is principally granite, dipping at an angle of 45° . towards the N. E., possessing however no regular stratification; quartz and mica are discovered, also hornblende, with the in the fragments that are detached from the summits of the hills. The prevalent timber observed is the spruce, fir, white birch, some cedar and pine.

Observed azimuths and altitudes of the Polar Star and Pointers; hence the latitude $47^{\circ}.32'.0''$ —variation 12° . west.

Wednesday, 13th. A slight rain fell this morning; sent the men however for the remaining part of the stores and the large canoe at the 23d Portage, and on their return proceeded forward on the Lake, which is about a mile and a half long. At the northern extremity of it we descended a small stream for about one mile, very shallow and stony, to the 25th Portage, which is only about 150 yards, through low swampy land, to Crooked Lake, which absolutely requires a guide to find the landing of the Portage. The land about this lake is in every respect low and swampy, timbered chiefly with tamarack and fir. The 26th Portage lies in a small harbor or bay, from whence

flows the outlet to the next Lake, and is like the last 150 yards across to the Lake, which is crossed to the 27th Portage.

Leaving this Lake, which lies about east and west, and is surrounded by a low level land, the Portage lays over a similar country, and descends a considerable hill to the River Bastonais, which is the first sensible step of difference of level with the Table land that appears to exist extending from Long Lake on the 8th portage to the 27th, which latter is 800 yards in length.

Embarked in the canoes and descended the River, which runs about a northern general course. The land on its borders is timbered with red spruce and balsam, and is of a better description than I have met with since my departure from the St. Maurice. At about a league below the Portage we passed a small lake, where I observed the white spruce intermixed with the red, rendering the land of an inferior quality; $4\frac{1}{2}$ miles below which a portage of 48 yards is necessary to be made. The river from the lake improves considerably, being about $1\frac{1}{2}$ to 2 chains broad in places; the banks are generally low although in a few parts bold and rocky. The predominant timber is red spruce, which is a favourable indication of the nature of the soil.

This short carrying place, and the 28th from the St. Maurice, is on the eastern bank, and avoids a cascade of 15 feet. The nature of the rock to be found here is granite, which dips 60° . SW. At half a mile below this portage we came to the head of a rapid, and having landed on the west bank, the canoes were shot down to the foot thereof, where we embarked and proceeded on. The current runs down very swift to another rapid or rather cascade, at which the lateness of the hour obliged us to encamp on the Portage which is on the west bank.

Since the 28th Portage the country has assumed a mountainous aspect, rising to considerable height, some of which discovers the abrupt faces of the cliffs at the intermediate and foot of the last rapid. The rock which is granite and forming the western bank of the river is nearly vertical, receding only about 10° . therefrom. This bank rises to about 50 feet, the summit of which is covered with moss, while the opposite bank is an extensive horizontal plane that stretches to the foot of the mountain that approaches the cascade of the 29th Portage. At this place the River contracts into a narrow channel forming by pendent cliffs which rise about 50 feet perpendicular. The opposite banks are

in every respect different from each other; the eastern bank is of irregular configuration, dipping about 45° S. E., while the western a little below the chasm is flat to the foot of a high hill, following parallel with the river, at the foot of which runs the Portage 300 yards to the foot or base of the fall.

The Bastonais river does not appear to have formed its present bed, as I observed no trace of water-worn subjects above the level of it in, noticing the appearance and state of the stratum, which appears generally to have been convulsed into its actual position by some evident catastrophe, and the fracture formed thereby opened the channel of the river; for above the 28th Portage, where the mountains are still at a distance and the country a horizontal plain to the N. W. the river takes a sudden direction towards them and leaves the plain to follow its broken course thro' the mountains. A very remarkable circumstance I noticed is, that several hills unconnected with any adjacent chain rise out of the great plain generally in conical shapes, and are seen at considerable distance.

Thursday, 14th. At an early hour the canoes and stores, &c. were transported below the Portage at the landing at the foot of the fall, which is above 15 feet. Reached a rapid, down which the canoes were shot unloaded, and we effected a small Portage, No. 30, of 70 yards, laying through a swamp of red spruce and tamarack. From hence the river slopes its course S.S W. between the hills, and we shot a few rapids to the head of a considerable fall and the 31st Portage, 300 yards long. Reached several places where the banks are formed of abrupt faces of the cliff that characterise the nature of the hills and mountains which appear to follow with the general course of the river, which recede on approaching the fall. There the river contracts to a narrow channel and falls in a cascade of about 50 feet, which is divided by two islands into small channels that increase the rushing noise of the torrent as it foams with splendid effect over the rocks. The islands are covered with moss and the stunted fir tree, while the surrounding country is generally wooded with the tall red spruce, diversified by the smooth water-worn surface of the rocks in the vicinity of the fall, whose whiteness contrasts with the dark shade of the fir tree, giving an interesting effect to the scene, as we had not witnessed a similar one since leaving the St. Maurice.

Dined this day upon doré and carp, which were taken at the foot of the fall in very little time. After which we pushed on to Lake Kajoualwang, a mile below the Portage Doré.

Observed a considerable island in the distance, upon which I directed my course N. N. W. At about 3 miles came opposite to an opening on the eastern border discovering a fine sheet of water bathing the foot of the hills. Having reached the island, to which the average width of the Lake is about one mile, and preserves the fame to a contraction of the Lake to half a mile. The land on the borders of the Lake possesses much of the same features as that which characterises Lake Edward. The hills do not rise to any considerable height, and are timbered with spruce fir, white birch and pine. Following the contraction of the Lake for about 2 miles, observing an improvement in the appearance of the land and soil which is barren, and possessing a more level surface. The Lake expands to about 2 miles broad, forming a large bay on the west, out of which runs the Bastonias River, which penetrates the country, and discharges itself into the St. Maurice River. The guide, who has frequently descended or ascended this stream, says that the distance is not more than 20 leagues between the Lake and the St. Maurice, and that the ascent therefrom or La Tuque may be effected in eight days, and the descent in five days, there being but five portages in that interval of distance.

Our course now lay about north to the head of the Lake, passing a large Island of nearly a mile long. The average width of this portion of the lake is about $1\frac{1}{2}$ mile. This country is bolder in its general aspect, and some part of it I believe would be susceptible of improvement and settlement. At the head of the Lake we encamped, where I trigonometrically ascertained the exact distance of several points, the island, and a blue mountain in the distance lying at the southern extremity of the lake and forming part of the elevations about Portage Doré, from whence by our course on the Lake it is about $11\frac{1}{2}$ miles, which makes the length of Lake Kajoualwang about $10\frac{1}{2}$ miles. It had rained the greatest part of the time we were on the Lake, accompanied with a strong southerly wind, which encreased as the former ceased on our approach to the head of the Lake, causing considerable surf that washed upon the sandy beach by which our encampment was placed. The atmosphere becoming clear of clouds, I obtained the latitude from the transit of several circumpolar stars over the meridian, $47^{\circ} - 48' - 30''$.

Friday the 15th. It rained from midnight 'till about ten o'clock this morning, when we started. Ascending now the waters of the Bastonais we passed a small lake surrounded by hills of unfavourable aspect, timbered with tamarack and white birch, to the 32d

Portage, which is near half a league long, and laying in a direction nearly north and south. The land it traverses in that distance is alternately swamp and mountain. In the first instance on leaving the lake we travelled over tolerably level land but rocky, to the foot of a high mountain, which we ascended, and then descended over a very rough path and windings of the portage, many of which had to be removed by felling the larger trees to enable the voyageurs to get the canoe across, thus reaching the base of the mountain, and a swamp of the worst description of ^{being} a white spruce or tamarack swamp, which leads to the last lake of the waters of the Bastonais River or St. Maurice. In this swamp we were obliged to encamp, as a continued heavy rain rendered it impossible to proceed.

Saturday, 16th, At an early hour, with a prospect of a continuance of fair weather, we got under way, and observed a difference in features that distinguishes the eastern from the western borders of the lake, the former being mountainous and timbered with fir, pine, spruce and white birch; the western is quite an extensive spruce swamp, unfit for cultivation.

Came to the 33d Portage, 1130 yards, which leads across a brulé, and generally through some very poor sandy and rocky land to Lake Quaquagamacksis and the first waters that flow into Lake St. John, being those of the Ouiatchouan River, which falls therein at the S. W. corner.

The general course of my route from the Batiscan to this division of the waters is nearly north, and is a distance from about 33 miles. The land about Lake Quaquagamacksis, is in every respect wild and desolate, as the fire has destroyed the timber which is now succeeded by a growth of aspen, poplar, small fir and white birch. The soil is very rocky and sandy.

The height of land is hardly perceptible, yet there is a gradual descent of about half a mile in the portage, and a small brook running northward into Lake Quaquagamacksis, wherein the canoes were again launched, and we embarked upon the waters flowing into Lake St. John.

Having passed a rocky island, the Lake thence contracts for about half a mile; it then expands, and we reached a small but rapid and winding stream. The land has become now quite low and assumed the character of swamp and marsh, which surrounds

this portion of the Lake. Descended the River, and passing to the head of two small lakes or ponds which lay in the extensive swamps that pervade this tract, we reached the 34th Portage, which is but 60 yards to similar ponds, which connect by a small stream to a lake of about one mile long, about which the land acquires more boldness in its features; from whence the River is descended to the 35th Portage.

This carrying place lays through a tamarack swamp, and is 530 yards to the lower landing at the foot of the rapids, which were shot down by Messrs Gouldie & Davis—thence we reached at a short distance therefrom the entrance of the River into a Lake.

Coming in upon the west side of the lake, where for some extent the land is alluvial, we were unable to view its dimensions until we had reached about the centre of it, where a very pleasing landscape was presented to the eye in the variety of the objects that it combined.

Kept a watchful eye for the outlet of the Lake, as it appeared by the sketch which the young guide's father furnished him with, that it was to be found on the eastern side thereof, and having passed four islands, two of which are about three-quarters of a mile long, we accordingly entered a deep bay, in which I expected laid the continuation of the Oujatchouan River; but no outlet could be found there, and we proceeded on farther up the lake. It is near a mile broad, and the land on its borders rises abruptly, timbered with fir, spruce and white birch.

Passed Green Point, so called for its contrasting its light green shade with the dark hue of the adjacent hills, possessing together the same description of timber, and came to the Presqu'Isle, about 4 miles from the inlet, opposite to which I noticed on the western shore a bay and some flat land having much the appearance of a river coming in on that side, and therefore continued on to the northward of the island and another Presqu'Isle, which is only connected to the main shore by a narrow neck of land. I then directed my course north across the lake towards a small bay, and not finding the river I wanted, I coasted the eastern shore, observing at this end of the lake a favourable appearance in the land, and its susceptibility for settlement, it being a well timbered tract with ash, fir, spruce, pine, and balsam, and thus came to a considerable stream entering with a gentle current and mixing its red tinged waters with those of the Lake.

Not finding the outlet on this side of the Lake, it occurred to me that it might probably be where I conceived there was the appearance of a stream opposite the Presqu'isle, to which we immediately crossed, and did find the desired outlet accordingly.

The Quiatchouan is here about two and a half chains wide, and runs with a swift current which brought us to the head of a rapid. It was however too late to venture down or go in search of the carrying place, we therefore encamped on the north bank which is high and steep.

Sunday, 17th. Having thus found the Indian's sketch erroneous, and the guide's information or knowledge not extending thus far north, I felt no little degree of apprehension at the western course this river was taking in a manner direct to the St. Maurice, and did not then wonder but it might prove the River Croche or some other tributary waters of the former; yet I determined upon descending this stream for some miles, and consider afterwards what step I should take to reach Lake St. John, as our provisions were now considerably reduced, and had sustained much damage by the frequent rains since leaving Three-Rivers.

Under these circumstances we continued the descent of the River, the voyageurs shooting the rapids and ourselves walking on the banks to the foot thereof, which proved a longer portage to us than we had anticipated, as the men could not find any fit landing place to await and take us in. Having however at last joined the canoes, we embarked and shot a continued rapid to a small lake, from whence the river flows taking a south-west course. In a state of doubt we made the Mountain Portage and the 36th, at which the large canoe was upset just above a cascade by the timidity of the novice, and was near losing my theodolite and other instruments.

On leaving the landing a high rocky mountain is ascended, the foot of which is bathed by the river which falls in a succession of cascades. From the summit of the hill could be discovered in a S. westerly direction, an extensive low country, much like a sea by its great distance. I conceived it no doubt to be the general gradual descent of the country towards the bed of the St. Maurice, and I regretted exceedingly not having had a mountain barometer to have ascertained our elevation from that flat country.

Descended from the mountain into an act tamarack swamp to a dead water stream, where the portage, which is 1 mile and 3 furlongs, terminates, and whose general course is about N. W. Obtained no hopes that the river would alter its course—proving the waters of Lake St. John, which to our great joy occurred, for this dead water stream, apparently the effect of the unusual rains, brought us to the River, which shapes its course to the north, and forming a considerable Island with that stream. Descended the River, which now traverses an extensive alluvial tract of country, which is susceptible of agricultural improvements. The rushes grow to a considerable height, some of which were pulled and brought up black earth of a clayey nature with its roots.

There are a few mountains which we observed on approaching the great Lake, which we reached at about $2\frac{1}{2}$ miles below the portage of the mountain. The lake at the entrance of the river, and which is half a league broad, lays in a course N. 30° E. which we followed, taking the centre of the Lake. The land on its borders is bold and mountainous, timbered with fir, pine and spruce, and white birch; in several places the shores are steep and rocky, and its aspect unfavourable for settlements, altho' the vallies might be found good.

Passing opposite the entrance of a stream on the eastern border, I proceeded to examine whether it might be the outlet of the Lake, but proving an inlet or feeder thereto, coming from the E. N. E. I bore from thence on the north end of the island, between which and the main land is a bar of alders. Seeing no channel, and desirous of taking a few trigonometrical points and intersections of remarkable objects, we encamped at the head of the Lake near a sandy shore, which afforded me an ample base.

Monday, 18th. It rained the greater part of the day, which time was occupied by the voyageurs in making paddles, many of them having been destroyed and broken in the frequent rapids that had been lately descended. The rain ceasing by 5 o'clock P. M. I desired the canoes to be launched, and we set out with renewed hopes of reaching the outlet before camping time. Having passed the small bar of alders which choke up the passage between the island and the shore, and veering northward round Pointe à l'aviron we beheld a continuation of Commissioners' Lake. The landscape it exhibited before us discovered in the boldness and grandeur of the objects, it combined the masterly touch of the great designer, Nature.

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The shores rise craggy and steep and to considerable elevation, above which tower two considerable capes of about 350 to 400 feet high on the eastern borders. Having reached the foot of the southern cape and landed on the rocks, we ascended the abrupt face thereof, and crossed over with much difficulty to the northern cape, the woods having many years past been burnt on their summits, leaving the rocks to discover their barren nature and nakedness of the vegetable mould, they may like some of the adjacent hills have been deposited, and through which that destructive element has not raged.

From the cape could be discovered for 20 or 30 miles to the westward a hilly broken and mountainous country, shewing in a few places the white summits of similar hills as that viewed therefrom, contrasting with the universal character of the country which is wooded with fir, spruce, tamarack and pine. A stream of some magnitude appeared to enter south-westerly with an alluvial flat at its entrance, thence ascending amidst the breaks of the hills which form its bed. Looking northward up the Lake, which is diversified by several islands, I noticed a large bay to the north-eastward, in which I supposed might be the outlet, yet on beholding the great body of water that still lay to the northward, I decided on proceeding on the Lake, and we accordingly descended the capes to the canoes and went on.

Passed the islands which are rocky, but well timbered with birch, fir, and spruce. The wind was blowing quite a northerly gale, which chilled the air to such a degree that we were glad to get under the lee of Sandy Point, where we encamped and made a blazing fire which restored our wonted vigour, having effected about seven miles since the last encampment, notwithstanding the length of time we had tarried at the capes.

Tuesday, 19th. Completed a set of 10 triangles of particular objects before breakfast.

Left Sandy Point at 9 o'clock—passed several barren craggy hills exhibiting a wild and wretched aspect of country, particularly on the eastern side, as the opposite has not been ravaged by fire, and the rocks are clothed with fir, spruce, birch, which a thin vegetable mould affords the growth. Reached the Blueberry Hills, which are a succession of similar barren capes as the two described below Sandy Point, but possessing yet greater height and a peculiar wildness of aspect, as they are distinguished

by several perpendicular cliffs which face the lake ; they are destitute of trees, and the brow of the hills at the foot of the cliffs are covered with blue-berries of a very large description and size, which circumstance has occasioned the name of the Blueberry Hills given to them.

Being desirous and anxious of obtaining from the summit of one of these hills a view if possible of the country lying between them and Lake St. John, we kept in with the base of the hills seeking a landing, as the shore is iron bound and dangerous ; having effected a landing, Mr. Gouldie and Mr. Davies taking various directions, I made directly to the foot of the cliff, which I climbed by the small twiggs and firs growing in the crevices of the rocks for nearly 100 feet, when finding no possible means of continuing the ascent as the cliff became more abrupt, and owing to the nearly vertical position of the strata, which only recede 15 or 20 degrees therefrom, which frequently causes part of the strata which are granite and gneiss, to be more easily loosened from the rock, large blocks of which are already fallen at the base, I descended to the canoes where I was shortly joined by the other parties, who could discover no appearance of a lake, but a general character of broken and rugged country which I had partly observed from my position on the cliff, together with a considerable river entering on the west side of the lake between the mountains that form its bed. Having resumed our course we reached a deep bay, in which enters a considerable stream, which circumstance almost foiled my hopes of finding the outlet of the lake in this part. Having landed on a barren rock or island, I observed the sun's meridian altitude—lat $48^{\circ} - 17'$, and thence proceeded to the head of the lake, which I found to be near seven leagues long, its average breadth from La Pointe à l'Aviron about a mile.

Finding no outlet, I determined to return to Hail Bay, the first large bay I had observed from the cape. In passing by the blueberry hills we experienced a sudden storm of hail and rain, accompanied by a heavy gale from the north, which rendered our situation truly perilous, being along a lee shore and tossed by a high surf, that pushed the canoes forward at a surprising rate. Reached Hail Bay, which proved to be the entrance of the Oujatchouan River. Here we were assailed by a storm of hail and rain, the hailstones being of an extraordinary size. We immediately came to the head of a small cascade,

where we effected a portage and the 37th from the St. Maurice River, 440 yards in length, and half a mile below which the 38th Portage on the south-east bank, of 223 yards, was crossed, from whence we reached a small lake, which opens upon Bouchette Lake, where we encamped at half-past 7 o'clock, on the sandy beach, on the approach of an impending storm that was collecting to the southward.

The general direction from Hail Bay to Lake Bouchette lays about E. N. E. $2\frac{1}{2}$ miles through broken and hilly land, the difference of level between that lake and Lake Commissioners being between 50 and 60 feet.

Wednesday, 20th. Set out early this fine morning, and from this lake, which is about 4 miles long, and about which the land rises into _____ of country, but discovering a very sandy light soil, we entered upon Lake Ouiatchouan, of about $1\frac{3}{4}$ mile long and 1 mile broad.

In the search of the outlet we made the tour of the island that lies at the end of it, and where the land appears of a better quality than has hitherto been observed. It preserves this character in descending the Ouiatchouan River, which runs with a very swift current to the head of a rapid which occasions the 39th Portage, of 550 yards, on the western bank. Here the elm, black birch, pine, fir and spruce, are found intermixed and growing on an argillaceous loam beneath a rich vegetable mould. Leaving this portage the river acquires considerable magnitude, being about 60 yards wide, and the land offers great susceptibility for settlement; the timber growing on its banks is ash, black birch, elm, spruce, fir and balsam, and some white pine. The general course of the river is about N.N.W. and we thus reach the 40th Portage, below a few small rapids, which we shot down, and a small stream that rises on the right in a small lake which is seen from the river. The 40th portage is on the eastern bank, of 660 yards in length, a furlong below which is a rapid which is divided into two channels by an island. The river then takes a northerly course and runs down with great swiftness, frequently interrupted by rapids which were generally shot down by the voyageurs; on which occasions they would exhibit such dexterity and adroitness in the management of the canoe as always excited my astonishment. On arriving at a rapid, Vivier, the bowman of my canoe, would generally land and examine the state of the rapid before venturing down; if his decision was for landing, a portage

was effected, if for shooting the rapids, I could rely upon his experience which had undergone many trials in the service of Captain Franklin, in his last expedition for a north-west passage, and his being mentioned in the works of that celebrated traveller and navigator. The motions of the helmsman are entirely regulated by those of the bowman, who watches the course of the water, or as it is called "fil d'eau." On coming to high surges, (bouillons,) the paddles are suspended, and the canoe in its passage frequently takes in a sea; when the channel is to be regained the bow and helmsman draw with their paddles on the same side, which is termed "rembarrer."

A peculiar display of native coolness and dexterity was exhibited by the guide in the descent of a rapid; the facility, and at the same time the degree of indifference accompanied with a knowing smile with which he managed the paddle at the helm was truly characteristic, added to the wildness of the surrounding objects, his flowing black lank hair playing in the wind, and the general stillness and silence of the remaining hands, who anxiously watched the countenances of the two active characters in the scene, truly excited a degree of interest that cannot be described.

Effected the 41st Portage on the eastern bank, of 440 yards in length, where the river is divided into two channels by a large island. Thence we came to the Portage of the island (42) where a small carrying place of twenty yards is crossed upon the island, upon which an abundance of berries of various descriptions are found, wild currants and blue berries, &c.

The land now ceases to offer that favourable appearance for settlement, it being in many places rocky and hilly, and in others of a low swampy nature, the prevalent timber being spruce, tamarack, fir, and some white birch. At about half a mile below this last portage we came to the Great Fall, where a carrying place is crossed on the western bank, of 600 yards, to the lower landing and basin. The rocks are all granite and of irregular inclination, and the land is very poor and rocky, producing chiefly but the tamarack and fir. Having launched the canoes below the fall, which I estimate about 50 feet in height, we left the 43d portage, and about 3 furlongs below it came to the 44th portage on the S. eastern bank. On leaving the landing a high mountain is ascended, from which a similar one is observed on the opposite side of the river, from which we descend to the river which runs thence still very rapid. The portage proving three-quarters of a

mile long and traversing a very rocky, rugged country, in which we frequently lost the path but little beaten, we were obliged to encamp at a late hour on very contrary ground, being upon rounded rocks for the greater proportion, and postponed the carriage of the canoes across the portage until the morrow.

Notwithstanding the numerous rapids and portages passed to-day we performed about 18 miles of distance down the river, which has fallen about 250 feet under the level of Lake Oujichouan. The rapids follow each other in quick succession, rendering the navigation of the River for canoes almost impracticable in ascending it, as many rapids can be shot descending. At one period I had hopes of the land improving in its quality or continuing like to that it presents from the lake to the 41st portage, but it has proved otherwise, as since the 42d Portage the shores have exhibited the most unpropitious aspect for settlement or the pursuits of agriculture. Obtained the latitude $48^{\circ} .22'$, by meridional and azimuth observation of the pole star. The variation increased to $14\frac{3}{4}^{\circ}$ west.

Thursday, 21st. Our provisions were now so reduced that but a piece of pork remained, and some damaged flour for a few meals more, the grease was nearly expended, and of the spirits there remained but a pint or so, which was reserved for our arrival at Lake St. John, which was now more seriously and anxiously sought for under those urgent and pressing circumstances. But I felt in some manner sanguine that we could not be then many miles from the goal of our utmost hopes, by the latitude observation I had obtained, as I was impressed with the idea that Charlevoix had placed Lake St. John in about the latitude of $48^{\circ} .30'$. Therefore our difference of latitude being but 8 geographical miles I entertained hopes of reaching the lake this day, which I expressed to the party. We accordingly by break of day effected the transport of the remaining luggage, and embarked in the canoes at the foot of the rapids, where the river is interspersed with several islands, and came to the 45th Portage on the northern bank, which avoids a considerable rapid, but which was however shot by the canoes without loading, manned each by the bow and helmsman. The portage, which is half a mile long, lays partly at the foot and partly over high hills, to which the general direction of the river from the 43d portage is about east, and from whence the direction is north to some rapids which were shot down to the Long Rapids of the falls, so called by a small stream following from the summit down the abrupt face of the hills which form the banks of the river.

Before reaching the foot of the rapids our large canoe took in, passing the furge (bouillon) about 12 buckets of water which nearly filled it. The small canoe which followed us, owing to the timidity of the helmsman, not taking the proper course of the water, besides taking in much of the furge struck upon a rock, but fortunately reached the shore at the foot of the rapid before going down. Mr. Gouldie shewed on this occasion a great deal of sang-froid, being himself in the canoe, which was drawn on shore and emptied to be repaired at the next portage, which we reached about a mile below the rapids.

On examining the canoe, besides the bark being split in the bow one of the braces was found broken which required immediate repair. In the mean time four voyageurs, the guide and ourselves set out to cross the portage, the former having considerable advance upon us.

On reaching the summit of the hill, to our infinite and inexpressible joy we beheld a prospect of Lake St. John, yet could distinguish no immediate objects, but as it were much like a sea in the distance, or a cloud resting on the horizon; our imaginations supplied the conclusion. In descending, the gradual inclination of the land for some distance it assumes quite a different character, being timbered with black birch, spruce, pine and some maple. The clay makes its appearance upon the surface, which is irrigated by several streams which intersect the path that here appears well beaten and daily frequented. Having descended about 250 feet into the alluvial land at the foot of the hills, the soil is found of an excellent quality, being what is frequently called *terre grise*, obtaining a growth of maple, fir, ash, pine, spruce, and some cedar.

Passed a large stream, three quarters of a mile beyond which we came to a superior growth of cedar on the borders of Lake St. John, and at half-past six o'clock, P. M. viewed with a peculiar delight the expansive sheet of water that offers this beautiful Lake. All was calm at the moment save but the breeze that rippled upon the surface of the lake. The islands in the distance and the boundless view beyond them enhanced the interest and admiration it excited and displayed, as it were a new atmosphere before us, after having been confined by the limited sphere of rivers, swamps, hills, ponds, and inferior lakes.

Made choice of an encampment beneath the pending cedars on

the sandy beach or alluvion of the lake, and on this occasion having divided the remaining store of spirits between the men and ourselves, the health of King George with cheers was drank, for the success attending thus far the first expedition fitted out under the auspices of the Provincial Legislature to explore this vast but little known portion of Lower-Canada.

Friday, 22d. As both canoes required indispensable repair to enable us to proceed with safety on the Lake in search of the Trading Post, after they should have been brought from the upper end of the portage which proved $2\frac{1}{2}$ miles long, and is the 46th from the St. Maurice, and at the same time being desirous of obtaining the latitude and variation at the mouth of the Ouiatchouan by a set of solar azimuths as the day was very favourable, I decided on remaining at this camp for the day and start for the Post on the following morning. From a set of observations and equal altitudes of the sun and a mean with azimuths of the pole star, meridian altitudes of the moon and Venus, I found the latitude of the entrance of the Ouiatchouan at our encampment to be $48^{\circ}.30'.15''$, and the variation of the compass $15^{\circ}.40'$ west.

Taking a retrospective view of the country that I had traversed from the St. Maurice to Lake St. John, I find it intersected by rivers and their innumerable tributaries rising more generally in the lakes, and the immense swamps which cover this section of the Province. The essential feature of the land is its unfitness for cultivation, being composed for the most part of a light sandy soil, or partaking of a rocky nature. It is frequently broken by chains of hills but of no continuity. The cliffs, which in many places discover their barren nature are principally composed of granite of irregular stratification. The hills disappear at the height of land between different waters where the common feature is an extensive spruce or tamarack swamp, frequently rocky or of a shaking boggy nature. The prevalent timber to be met with is spruce, tamarack, fir, white birch, pine, and some cedar.

Around some of the large lakes some arable land is to be found, but so uncomeatable that it must ever remain waste and uncultivated. Indeed, upon the whole, this portion of country appears to me to be yet in the primitive stage of its formation, which I believe could be easily traced by a geologist, and therefore ages may perfect a tract which now is absolutely unfit for cultivation.

RECAPITULATION of the Portages and the distance travelled
from the St. Maurice to Lake St. John :—

The distance performed on the route in the 46 Portages or carrying places, taking their lengths collectively, is about 24 miles, which was generally tripled to effect the transport of the luggage, stores and canoes.

The following table will exhibit the total distance, as well as relative distances of remarkable places on the route :

TABLE OF DISTANCES.

Entrance of the Bastonais River																		
9	Grand Wagagamacke.																	
21	12	Portage 3d.																
26	17	5	Inferior Wagagamacke.															
34	25	13	8	Portage on division of the waters Bastonais and Batiscan.														
43	29	17	12	4	North-west Branch Batiscan.													
45	36	24	19	11	7	Lake Edward.												
69	60	48	43	35	31	24	Portage 20th—on north-east branch Batiscan.											
71	62	50	45	37	35	26	2	Port. 24. Division of the waters Batiscan & N. Bastonais.										
87	78	66	61	53	49	42	18	16	Lake Kagoualwang.									
92	83	71	66	58	54	47	23	21	5	Portage 33. Lake Quaquagamacke and first waters Ouatichouan River.								
99	90	78	73	65	61	54	30	28	12	7	Lake Quaquagamacke, or 35th Port.							
107	98	86	81	73	69	62	38	36	40	15	8	Mountain, or 36th Portage.						
111	102	90	85	77	73	66	42	40	47	19	12	4	Commissioners' Lake.					
118	110	98	93	85	81	74	50	48	55	27	20	12	8	Hail Bay, or 37th portage				
126	118	106	101	93	89	82	58	56	63	35	28	20	16	8	Portage 39.			
141	133	121	116	108	104	97	75	71	68	50	43	35	31	23	15	Portage 44.		
148	140	128	123	115	111	104	90	79	75	57	50	42	38	30	22	7	Ouatichouan or [46th portage	
150½	142	130½	125½	117½	115½	106½	82½	80½	77½	59½	52½	44½	40½	32½	24½	9½	2½	L. St. JOHN.

Saturday, 23d. Set out at an early hour this morning for the Trading Post, at the mouth of the Metabethuan, and a breeze blowing from the southwest we suspended the use of the paddles and raised a sail which brought us to Pointe a la Traverse, thence

shaping our course with the borders of the Lake S. E. & by S., passed Pointe au Bouleau and reached Pointe au Raisin, from whence we espied with peculiar sensation the habitation of the Post on the eastern bank of the Metabetsuan. A voyageur song and the firing of a fowling piece brought the inhabitants of the Post to the shore, who echoed the latter on perceiving us approach.

At the landing we were received by Mr. Andrew Stuart, one of the Commissioners, who with Mr. Wagner, Mr. Nixon and Mr. Bowen had only preceded our arrival the day before, forming one of the expeditions which ascended the Saguenay. After the reciprocal greeting on the occasion, I learnt that the St. Maurice party having been despaired of reaching the Lake, the service assigned me of ascending the Assouapmousin and exploring the S. and S. westerly borders of Lake St. John, had been committed to be performed by Mr. Hamel's party, then on the Lake in the vicinity of the Grande Décharge. Our happy arrival restored the original design with the additional instructions from Mr. Stuart, that I should explore the country lying south-east of Belle Riviere, &c, &c. and bounded on the one side by the mouth of that river, and on the other by the Chicoutimi country, instead of the Peninsula which had been previously proposed.

A plentiful repast, consisting of the vegetables raised at the Post by the industry of Mr. Murdoch, the Clerk of the Trading Establishment for the King's Post Company, and the luxuries brought by the other party, perfectly restored our famished appetites to their natural tone having lived for the past fortnight upon sour flour and grease—occasionally pease soup.

Sunday, 24th. At 10 o'clock, the Commissioner and the party left the Post to make the tour of the Lake. It being necessary to have a certain quantity of flour baked into bread for the more ready use in exploring, which could not be effected but at an hour too late to set out, I took with me two men in the large canoe, being the only one remaining, as Mr. Stuart found it expedient to reduce my party of voyageurs of one man (Tereau) and the guide. Mr. Gouldie finding it necessary to reach Quebec at an earlier period than was likely to be the case in remaining of my party, had attached himself to Mr. Baddely, which circumstance deprived us of our military and agreeable companion. I ascended the Metabetsuan, which a little above its entrance expands into

a large basin spreading to the foot of the rapids, where we landed, from which I made an excursion on the left or eastern bank to the summit of the hills which overlook the Post, and are about 3 miles from it. The land I found of a middling good quality, being for the chief part of red loam intermixed with very small gravel and clay to no considerable depth beneath the black vegetable mould. The prevalent timber there, is spruce, black and yellow birch, basswood, fir, pine, poplar and some maple.

Having travelled about 2 miles, and not finding the carrying place as I expected, I returned to the Post, where Mr. Davies had remained to class the specimens collected in the interior country.

The establishment of the post consists of a dwelling-house for the resident clerk, a store, bake-house and stable or barn, with a spacious garden, yielding abundance of vegetables, particularly potatoes for the use of the inhabitants of the Post. It is situated upon the same site where the Jesuits in the 16th century had an establishment, and there remains yet the furrows made by the plough on the lands adjoining to the garden, which at that period were entirely cleared, but are now covered with a growth of spruce, aspin, fir, birch and pine, some part thereof producing Timothy hay. The apple and plum trees, which to the knowledge of many persons who have seen them at the Post, have grown wild and disappeared. The Metabetsuan, which means "the place where the course of the waters end," is a fine broad stream, deep at its entrance into the basin at the foot of the rapid; on its shores at the post are to be found a variety of marine shells and other organic remains, many valuable specimens of which have been collected by Mr. Davies and Mr. Baddeley, the latter an officer of the Engineers, who volunteered in our expedition in pursuit of his favourite science, Geology. This night passed in observation of the circumpolar stars obtained me on a mean of several previous observations of the sun's altitude, the lat. 48.-27', and variation of the compass 15°-30' at the Post.

Monday, 25th. Having taken the quantity of provisions that would be required to ascend the River Assouapmoufsoin and effect the exploring of certain portions of the borders of the Lake, we left the Post at 10 o'clock. Proceeding on foot along the south borders of the Lake, I took the following courses and distances to operate as a base to obtain intersections of the conspicuous headlands on the north-east side of the Lake and Pointe Bleu and the

islands on the western side, at the same time to acquire more accurate information of the soil and timber.

Beginning at the western point of the mouth of the Metabetsuan

Course.	Distance.		Notes.
	Chains.	Links.	
N 21 W	13	0	Elm, Basswood, Maple, Clay; Loam.
N 51 W	6	30	
N 89½ W	9	67	North & Goose Ile N 34 W. White and Red Pine, Poplar, Birch.
S 13 W	6	16	
S 75 W	25	10	Spruce, Fir and Cedar, to Pt. of Alders, and a small stream.
S 81 W	19	20	
S 85 W	19	25	Alders and elm, good land. Small bogs and rocky point.
West	21	50	
N 80½ W	12	0	Sandy soil. Cedar, spruce and pine.
N 36½ W	2	0	
N 48 W	18	83	Hill S. 20 E. Rocky point.
N 74 W	4	17	
N 32 W	9	0	Rocks, limestone, dips 45 N. Fir, balsam and white pine.
N 70½ W	5	50	
N 16 W	8	0	Rocky point; poplar, birch, elm.
N 54 W	5	50	
N 74 W	1	50	
N 75 W	11	85	
N 21 W	12	0	
N 41 W	23	0	
N 61 W	3	0	
N 21 W	12	0	
N 41 W	23	0	

A strong gale from the N. W., accompanied with hail and rain, obliged us to encamp on the beach at 3 o'clock.

Tuesday, 26th. Made an excursion into the interior, shaping my course about S. S. Easterly, and traversed over an excellent quality of land, for about half a mile from the Lake, the soil being of a rich clay loam, commonly called *terre grise*, which extends

to the foot of a rising ground, upon which the soil is of a lighter loam, and at about half a league I reached the higher elevations, where the country becomes wooded with spruce, fir, tamarack and white birch. The first description of land I met with above-mentioned is timbered with black birch, ash, fir, balsam, pine, elm, basswood and some maple; that upon the rising ground possessed less of black birch, ash, fir, maple or elm. Having returned to the camp and finding the gale much abated, which caused a very high swell on the Lake, I resumed the exploring of its borders in the manner commenced from Metabetsuan.

Course.	Distance.		Remarks.
	Chains.	Links.	
N 39 W	17	0	A rocky shore, elm, ash on the borders, and spruce, fir in the rear, mixed loam, good land.
N 40 W	29	50	Passing part of the distance on an iron-bound coast; took up specimens of white marble, calumet stone, vegetable petrification and other organic remains. The rocks are dipping 45° N.E. The timber observed is spruce, cedar, ash, fir and pine.
N 66 W	5	50	Grosse Isle, bearing N. 20°. W. Pte. à la Traverse, N. 29°. W. Pte. Bleue, N. 25°. W. Green marble water-worn; elm, birch, fir, spruce, white ash, aspin.
N 33½ W	8	0	Black birch, ash, spruce & fir.
N 42½ W	16	50	Rocky shore, calcareous, dip 35°. NE.
N 54 W	12	50	Sandy Beach.
N 32 W	11	0	Ditto
N 45 W	11	50	Extensive limestone & flate quarry.
N 46 W	9	25	Elm, ash, fir, spruce, Good land.
N 40½ W	8	0	To Point of Alders.
N 10½ W	3	0	
N 17.30 w	20	48	Aspin, elm, fir.
N 43½ W	7	25	} 105°-20'
N 68½ W	16	0	

Course.	Distance.		Remarks.
	Chains.	Links.	
N 87½ W	9	75	Limestone quarry, cliff 20 feet perpendicular.
N 48 W	21	0	Cedar, fir, spruce.
N 48½ W	11	25	Pine, ash.
N 16 W	7	0	
N 21 W	13	35	Stony beach.
N 28 W	9	0	Poplar, ash, cedar.
N 33 W	3	75	Sandy beach; alluvial land or deposit.
N 37 W	8	26	A small stream, 12 links wide: elm, ash, cedar, fir, black birch. Excellent land.
N 11½ W	19	50	Some poplar and spruce.
N 20 E	9	0	
N 59 E	14	0	
N 18½ E	5	0	Pointe au Bouleau. Encamped at 6½ o'clock. The night proving favourable for observations, I found the latitude of the point 48° .29' .30" and the variation 15° .45'.
N 34½ W	37	0	Wednesday, 27th. Clay loam, excellent land, fir, elm, spruce and ash.
N 63 W	18	0	
N 20 W	9	0	Pt. extending 8 chains,
N 47 W	12	16	Mixed timbered land.
N 48 W	17	0	Sandy beach.
N 64 W	15	68	Poplar, fir, birch, spruce.
N 52 W	10	0	
N 35½ W	14	0	Burnt woods, the situation of a
N 34 W	15	17	Post.
N 15 W	10	78	Cedar, poplar and spruce.
N 19 E	12	50	
N 15½ W	6	65	
N 47 W	10	0	Bearing of Grosse Isle,
N 84½ W	15	16	Sand Bank and
N 54 W	20	0	Island.
N 48 W	10	0	Bearing Pte. Bleuc, Grosse Isle,

Course.	Distance.		Remarks.
	Chains.	Links.	
S 69 W	7	50	Slate quarry, limestone,
N 1½ W	7	50	Pointe à la traverse,
S 18 W	13	27	Regular slate, horizontal strata,
S 14 W	6	0	Angle with the falls, 29°.
S 13 W	7	44	Excellent land, fir, aspin, spruce,
S 8½ E	4	42	elm.
S 58½ W			165 Chains across Ouiatchouan Bay to the camp at the entrance of the river; Trigonometrical process.

Having come opposite Grosse Isle, which is a mile and a half across from Pointe à la Traverse, I visited the island, which is about 2½ miles in circumference; the land upon it is of good quality, timbered with spruce, elm, pine, and ash. From it I trigonometrically ascertained the distance of Petite Isle, Pointe Bleue and the Sand Bank. Mr. Davies, in pacing the circuit of the Island, met with blocks of granite. Petite Isle lies north-west near two miles distance from Grosse Isle, which time did not allow me to visit, as it was a matter of considerable expediency to ascend the Afsouapmoussoin, with Mr. Verrault, who had passed me in the morning on his way thither with laden canoes for the Trading Post on Afsouapmoussoin Lake, and who was to expect me at the mouth of that river—so favourable an opportunity of acquiring much local information for the good of the service. The position and names of the carrying places, &c. I thought should be availed of.

Before leaving the Island, I observed the sun's meridian altitude, lat. 48° 32' 26"; and noticed a chain of hills which range from Metabetschuan with the southern borders of the Lake and intersect the Ouiatchouan River, causing the beautiful and splendid falls of Ouiatchouan, which are 236 feet perpendicular height, which has given the river the name of Ouiatchouan, in the Cree language meaning, "Do you see the falls," then a carrying place must be crossed. The hills on leaving the river continue their western direction for some distance, then appear to shape their

course N. westerly. They are covered with spruce, fir and pine, and are about 6 or 700 feet elevation.

Having thus completed the admeasurement of the base and explored the south borders of the lake, we left the Ouiatchouan river, which has a small island at its entrance, and proceeded to explore along the western borders of the Lake. The cedery that has been before mentioned has no very great extent; on leaving which the timber assumes a very different character, being principally fir, spruce, white birch, pine and aspen, indicating a much lighter soil than prevails on the south side.

Passed the Ouiatchouanish, about which there appears to be an extensive tract of level good land at its entrance. It is about three miles and a quarter from the Ouiatchouan, leaving which the lake becomes indented with numerous bays, and the shore is in many parts rocky, the land rising above horizontal strata of calcareous rocks, timbered chiefly with spruce, poplar and white birch, and some red and white pine.

Reached Pointe Bleu about $6\frac{1}{2}$ miles N. by E. from Ouiatshouan. It is a point of rock covered with moss, and a small growth of cedar, from which the lake borders run W. N. westerly, describing a very wide bay, the land around which appears of good quality, being timbered with ash, fir, balsam, spruce and cedar, and is level to a considerable extent. Having extricated ourselves from amongst the intricate channels, by numerous small alder islands that lay in the bay, we shaped our course N. N. W. for the mouth of the Assouapmoussoin which we reached at 8 o'clock, and encamped on the eastern bank, near Mr. Verrault's encampment.

Thursday 28th.—Made a depot of such provisions and baggage as could be dispensed with, and prepared for ascending the Assouapmoussoin. The land at the entrance of the river is of an excellent quality, and is chiefly of an alluvial nature, the alluvion being deposited over a surface of clay and marl, which is at a considerable depth beneath it. There are two islands at the mouth, one in particular is not less than half a league in length, the timber growing thereupon, is elm, ash, fir and alders. The width of the river is not less than $\frac{3}{4}$ of a mile at its mouth, and above the large island is near half a mile.

In ascending the river, I observed the land on the western branch, is of a better description than its eastern. It is generally alluvial, exhibiting beneath a vegetable mould, an argillaceous loam, called *Terre grise*, resting on a stratum of white clay, under which is occasionally observ-

ed a bed of blue soft marl, dipping below the surface of the water. The timber principally consists of elm, ash, cedar, fir, balsam, red spruce, white and red pine, yellow birch, some poplar and white birch. Although on the eastern bank, this under strata of earth and soil prevail more or less, yet the proportion of sand is greatly intermixed with the loam, and the timber consists of tamarack, white birch, spruce, fir, balsam, aspin and pine, cypress, and a red or Norway pine, is commonly observed on both banks. At $1\frac{1}{2}$ league, and above another considerable island, the river becomes very shallow, and the current runs down with much swiftness, and alters its course from N. 30 W. to S. 25 W., to a cluster of three islands of the same character, as the one already described. From thence the river takes a general N. N. W. course, and becomes rapid, and here the paddles are laid aside and resort to the poles, resuming the paddles at a short distance below a small portage over the rocks on the eastern bank, and at 5 miles above the cluster of islands.

This first portage is 130 yards in length, and lays over the rocks of the river during the summer, but in spring passes into the woods. About three fourths of a mile above this portage is the Portage du Saumon, on the western bank which is 1200 yards, leading partly through the woods and partly on the beach.

The Assouapmoussoin falls here two distinct cascades, the uppermost is however more a perpendicular fall of about 15 feet, affording in the basin below it a propitious site for a mill; it thence directs its course S. easterly, and falls over the broken rocks, and divides into two channels nearly at the foot of the portage, by a small rocky island.

In the basin or bay at the upper landing is a well timbered island of half a mile long. From the portage we reached the River au Saumon, which runs S. westerly into the interior country, which ceases to be cultivable at about 6 or 7 leagues from its mouth, as the land becomes swampy and covered with extensive plains, producing but the white spruce, and is the fit country for the hunting of the deer or caribou.

There being an appearance of an approaching storm, we encamped on the island opposite the mouth of the river, at 5 o'clock, P. M., shortly after which the wind blew with such force as to drift the water on the river, and rise several trees by the roots, which we heard fall in every direction. This sudden gust was followed by torrents of rain, which ceased late in the evening.

Friday 29th.—Left the island early this morning. The average width of the river is somewhat over a quarter of a mile, and runs down with a swift current. Its banks still offer an excellent quality of land,

and the greatest susceptibility of settlement. The soil is principally argillaceous loam over strata of white clay; the marl is frequently observed but at considerable depth beneath the latter. The timber is a fine growth of elm, ash, spruce, red pine; in several places, however, especially on the eastern bank, the loam contains much sand although the under strata of soil is the same. The principal timber is spruce, fir, white birch, aspen and cypress.

The general course of the river from the Portage du Saumon, to the third carrying place, is N. 7° east, about 7 miles; then E. N. E. about one mile to an island, then N. N. W. $2\frac{1}{2}$ miles to Portage à l'Ours. At the third portage the land begins to assume a more sandy character, the poplar, white birch, pine and tamarack is the timber most prevalent on the banks of the river, and becomes still inferior on approaching the Portage à l'Ours. This portage lies on the east side of the falls, which are at least fifty feet perpendicular height, and have a fine effect in ascending the river. Its length is nearly a mile and a quarter, and leads through a growth of cypress, small red pine and fir, produced on a sandy poor soil, while the clay is at a considerable depth below this surface.

From the upper landing it is half a league to the Petit Portage à l'Ours which is 350 yards across a narrow tongue of land. Here the river describes a crescent falling over the rocks, in a very picturesque manner. The sand banks are seen on both sides of the river between those portages, affording but a very poor idea of the country. From this portage, it is three fourths of a mile to Pemouka rapids and carrying place of the south bank, as the general course of the river is east and west. This portage is 660 yards over the rocks, which in spring are covered by the river, in which case the carrying place is made on the north bank.

From the upper landing we crossed the river, and ascended to the portage of Pemouka, or "last pine," so called, from its being opposite the last pine that is to be seen through the interior country. It is $\frac{1}{2}$ of a mile in length, and leads through a white spruce or tamarack swamp. It being a late hour, we encamped at the upper landing under the cypress trees on the borders of the river.

This night I obtained altitudes of the moon and several circumpolar Stars, latitude therefrom $49^{\circ} 0' 30''$, and the variation of the compass only $9^{\circ} 8'$, so extraordinary a diminution must be attributed to the rocks which must be impregnated with magnetic iron ore, although upon application of several specimens, I could perceive no sensible attraction.

Saturday 30th.—Having ascended the river Assouapmousoin thus far, a distance of upwards of 30 miles, I found, that in passing the por-

with a view of ascending to the carrying place, on the west bank of the Metabetshuan, and exploring some part of the country in that direction. Having landed at the portage on the south side of the basin, the transport of the canoe was with difficulty effected for $\frac{1}{4}$ of a mile, where it became impossible to proceed with it, it was then left, and I continued across the portage. For about $\frac{1}{2}$ a league it is tolerably level, thence rises from a small stream which I found strongly impregnated with carbon of iron and sulphur.

The country then becomes more broken, the land, notwithstanding, is of good quality; passed occasionally at the base of a perpendicular cliff in traversing a rich ash and spruce swamp, alders and cedars intermixed; its soil consisting in a dark loam of an argillaceous nature. Having descended a hill at about 4 miles from the landing, to the small stream running north, we encamped at 7 o'clock, the night portending rain.

Thursday 4th.—Proceeded, notwithstanding the incessant rain, on the portage, and at about one mile, reached the upper landing of the Metabetshuan; in this distance the land is of a very sandy light description, clothed with poplar, fir, balsam and generally little susceptible for settlement. The Metabetshuan, where I intersected it is but a narrow stream, very shallow and rapid, offering on its borders, land of no favorable appearance.

Effected our return to the post by five o'clock, where Mr. Nixon, who was attached to Mr. Hamel's party had arrived with a sick man, from the north side of the lake. The rain still continued to fall in torrents, and affording but an unfavorable prospect for the morrow.

Friday 4th.—Made a demand upon Mr. Murdoch, the clerk of the post, for a certain quantity of provisions, that I might be enabled to explore the country lying S. E. of the Belle Rivière to the Chicouimi country. The rain which had fallen since morning, only ceased about 2 o'clock, when preparations were made to leave the post. Set out at 4 o'clock, Mr. Nixon in company with us on his return to his party, and landed at the Kushpahigau at about 6 o'clock, and encamped on the eastern bank at the mouth of the river. Wind from the S. W.; a prospect of fair weather.

Saturday 5th.—Clear morning—observed Pointe Bleue, bearing N. $43\frac{1}{2}$ west—Grosse Isle N. 48° $30'$ W.—Pointe à la Traverser N. $55\frac{1}{2}$ W.—the hills of Ouarichouan, in the vicinity of the falls N. 65 W. Pointe au Raisin N. 79 W.—a particular mountain in the northern chain, bearing N. 33 E.

Having taken such provisions as would be required for a few days, we ascended the Kushpahiganish, for about seven miles, presenting in its alluvial banks a soil composed of clayey loam. In such places as they rise to any elevation, the clay lies beneath a bed of lighter loam and the vegetable mould. The general quality of the land is of an excellent description, timbered with elm, ash, black birch, basswood, maple and fir. On the high banks, the principal timber is pine, spruce, fir, white birch, cedar and balsam. The white and red pine are of a good quality.

Having encountered much delay by the rapidity of the current, and the many obstructions occasioned by large trees that had fallen across the river, which obliged the necessity of cutting a passage through them, we could only ascend about 7 miles, where the river becomes very narrow, and the navigation completely obstructed by the fallen trees; we encamped on the eastern bank.

Sunday 6th.—Penetrated about two miles interior, traversing a much intersected and broken country, not however of a rocky nature, the soil being a rich yellow loam or clay, at a few feet depth. The most prevalent timber on this elevated tract, which is at least 150 feet above the bed of the Kushpahiganish, is black and yellow birch, spruce, maple, fir, ash, elm and a good description of red and white pine. This land, though difficult to cultivate, is well calculated for pasture ground.

Having returned to the camp, near which is a pine of about 12 feet circumference, united in the same root with a very large spruce, we embarked into the canoe to return to the mouth of the river, which had fallen near 18 inches during the night, rendering it again necessary to cut a new passage through the fallen trees on the river. Observed that this river is but little frequented by the hunters, as I met with no marks on the trees of any description, and noticed by the many tracts of the beaver and otter, that they have been but little visited or molested by the Indian hunters.

Reached the mouth of the river at 4 o'clock, and left it again at 5 o'clock for the Kushpahigan, which we entered at $\frac{1}{2}$ past 6 o'clock, P. M., it blowing a strong southwesterly gale, accompanied with rain. Encamped on the north east bank,

The following table exhibits the respective distances of remarkable places on the borders of lake St. John, determined partly by trigonometrical process, admeasurement and estimation.

TABLE OF DISTANCES.

Mouth of the Kuspahigian, or Belle Rivière.

5	Kuspahiganish.											
10½	5½	Post of Metabetshuan.										
20	15	9½	Pointe à la Traverse.									
25	20	14½	5	Falls of Ouiatchouan.								
33	28	22½	13	8	Pointe Bleue.							
41	36	30½	21	16	8	Mouth of Assouapmoussoin.						
47	42	36½	27	22	14	6	Mistassini.					
61	56	50½	41	36	28	20	14	Periboka.				
78	7	67½	58	43	45	27	31	17	River Coucouathimi.			
83	78	69½	63	48	50	32	36	22	5	Grande Décharge.		
88	83	74½	68	53	55	37	41	27	10	5	Petite Décharge.	
99	94	85½	79	64	66	48	55	38	21	16	11	Mouth of Kushpahigan or Belle Ri- vière.

Before I take leave of lake St. John, I would offer some general observations on the characteristic features of the circumjacent country, its locality and advantages.

Lake St. John is situated in an immense valley, being the reservoir or basin of the numerous large rivers and streams which discharge themselves into it, many of which rise in the high lands that separate the Hudson's Bay territory from Lower Canada, depositing in their progress from the mountains that form this great valley, the materials for improving and fertilizing the soil. The lake is nearly circular, its greatest breadth is 30 miles from Metabetshuan to Periboka, and its least about 18 miles from St. David's Point to Pointe Bleue, and covers in superficies about 510 statute square miles.

The extent of cultivable ground on the south side of the lake, between its borders and the mountains, which intersect the Metabetshuan and

Ouiatchouan, at an average distance of 5 miles from the lake, may amount to about 80,000 or 100,000 superficial acres. This tract is composed of an excellent quality of soil, being generally a dark rich loam, frequently argillaceous, and occasionally with intervals of a sandy nature, and is commonly covered with a fine vegetable mould. The timber chiefly clothing this land is black and yellow birch, ash, fir, bass, cedar, spruce, red and white pine, and the maple, which affords a sufficient quantity of sugar for the use of the inhabitants at the Trading Post.

These mountains continue ranging westward from the falls of Ouiatchouan, for about 8 or 10 miles thence, shape their course N. westward towards the Assuapmoussoin, which they traverse at the Grands Rapides, leaving thereby a valley, of which the west side of the lake and the western bank of the Assuapmoussoin is a front, containing a superficies of about 200 to 250,000 superficial acres. So large an extent will most probably partake of a variety of soils, good and bad; but in assuming the front on the west of the lake, and the land on the western bank of the Assuapmoussoin as a criterion, there will be found a great portion of the land in the valley susceptible of culture and settlement. This description may extend to the lands on the immediate banks of the Mistassini; thence eastward the country extending from the northern borders of lake St. John to the mountains which stretching south easterly from the Grands Rapides on the Assuapmoussoin, form part of the great valley of lake St. John, is remarkably low, which is its principal feature. Perhaps along the Periboka, some good arable land may be found, but exclusively to that, it appears of a sandy light soil, timbered principally with spruce, fir, red and white pine, white birch, aspen and tamarack.

Lake St. John is too shallow for the navigation of schooners, at least for a considerable distance from the borders, which can be approached only by flat bottom boats, or the bark canoes by reason of the many shoals which set out from the borders, particularly about the entrance of the rivers. The lake abounds with many descriptions of fish, as the doré, the carp and the bass; trout, white fish, eels, pike, and a peculiar fish called wenanish. Great quantities of fish are now taken at the mouth of the Ouiatchouan, which appears the most propitious place for setting the nets, and where the fish is found most abundant of any other part of the lake. It is then salted and put into barrels for the use of the Traders.

To form a correct idea of the climate, requires the experience of a few years. The temperature, however, for the time I remained at the lake, I found equal to that of Quebec, possessing a clear and cloudless sky, and a fine and salubrious atmosphere. I found the nights in traversing the country much colder than at lake St. John.

The lake is frozen about the middle of November, and is clear of ice by

the end of May ; the interval of vegetation is therefore short, but is proportionably more rapid, as a small quantity of wheat which had been sown at the post, was fast approaching to a state of maturity ; potatoes had been for a considerable time in flowers, and were eaten during our stay.

Monday, 7th September 1828.

Rain this morning. Left the mouth of the Kushpahigan, and ascending the river, whose general course for about half a league is nearly south, observed an alluvial flat on both sides of the river, which extends to some distance back from its banks, to a rising ground which appears to keep a parallel direction with the river ; the soil on the flat is much of a clay nature, occasionally exhibiting a surface of rich loam or vegetable mould, the timber principally growing on this alluvion, is elm, ash, fir, black and yellow birch, alders, spruce and pine. This tract bears the indications of being overflowed in spring, to the foot of this small elevation, which gradually approaches the river, above the second mile where the course of the Kushpahigan or Belle Rivière, is about south-east and by east, to the portage or carrying place, about six miles from its mouth.

In these last four miles, the stream becomes swift, running deep, with great rapidity ; the banks are occasionally bold, and the land still excellent in various places, the quality of the soil being generally strata of white and blue clay, beneath a surface of rich loam, commonly red, having more or less depth above the latter ; the prevailing timber is elm, spruce, black, white and yellow birch, ash, poplar, pine and balsam, some cedar and alders. At the lower landing of the portage of Belle Rivière, the river contracts to about ten yards, presenting in the rushing waters that precipitate themselves over the rocks, together with the wildness of the surrounding scenery, as the cliffs that impend over the basin and river rise to upwards of 75 feet perpendicular height, a very interesting and picturesque cascade. Here is afforded a site well calculated for mills and other works of that nature.

The portage is upon the northern bank, and is one quarter of a mile long, leading first over a very high hill, where the land is again level to the upper landing at the head of another fall of about twenty feet high, making the difference of elevation together, of between fifty and sixty feet.

Here the land is of good quality, composed of a dark argillaceous loam, beneath a rich vegetable mould ; the varieties of timber are red spruce, ash, balsam, black and white birch, cedar, elm, red and white pine. This description of land forms the leading feature of the country, along the banks of the Belle Rivière, to the Rivière des Aulnais, about two and three fourths of a mile above the portage, the general course therefrom is south east. Here the Belle Rivière forms a large basin in the

centre of which is an island of excellent land. The river enters at the south-east end, with a cascade of ten feet, falling through a narrow contraction of the river, not exceeding two or three yards at most. Next to this on the north-east side of the basin, enters the River des Aulnais, with a gentle current, called in the Indian or Cree languages, "Peshikaouinamishushihi" "of alders;" here we encamped at half after four o'clock, it having rained during the greater part of the day.

Tuesday, 8th.—The voyageurs finding it indispensably necessary to repair the canoe, which would take some time to effect, Mr. Davies and myself proceeded up the Belle Rivière on foot. Exploring the eastern bank, for about three miles, I found the land more broken and hilly, rising in some places near one hundred feet above the bed of the river, whose general course is from the basin about S. S. W., and is not less than 30 yards wide. In the vicinity of the small streams that flow into the main river, I observed some valuable beds of blue soft marl, and frequently much clay forming the sides or slopes of the hills; from the summit of one of these, I observed at about six miles distance, bearing south, a range of hills stretching eastward, and apparently a continuation of those intersecting the Kuspahiganish. The intervening land is broken, and generally clothed with spruce, pine, balsam, birch, that which borders the river is ash, elm, fir, balsam.

Having found the character of the land, so far of arable quality, we returned to the camp, with the intention of ascending the river some considerable distance in the canoe, but in examining the state and quantity of our provisions, I found that Mr. Murdoch, the clerk of the post, had only furnished me with about half the quantum I had requested in my statement. Thus curtailed, I conceived it highly imprudent to venture another day up the Belle Rivière, while there remained yet near 50 miles of distance to be performed, to reach Chicoutimi.

Set out from the camp at 3 o'clock, P. M., and commenced ascending the Rivière des Aulnais, River of Alders, very justly so called, as the alders were grown so thick on the banks and entangled across the passage of the river, which is extremely winding, that with the utmost difficulty, we performed about a mile, and encamped on the northern bank, precisely where the Assuapmoussoin party had encamped on the 21st August.

The land forming the banks of this small stream, is of an alluvial nature; the soil being generally clayey loam, timbered with elm, ash, spruce, some pine and fir; at about a quarter of a mile distance, on the south bank is observed an eminence which follows the general direction of the river, which is south easterly. While the voyageurs were busy in encamping, I followed a path, which at about 30 chains led me back

to the encampment at the basin, having thereby discovered the portage of the alders, I determined on walking the continuation of it on the following day.

Wednesday, 10th.—The voyageurs having got fairly under way up the river, which still appears obstructed by alders, I walked the portage with Mr. Davies, and took the following courses and remarks:

Course of the Portage des Aulnais.

- S. 25' E., 4 chains—Met a brook running S., land rising on the left, soil, loam and clay.
- S. 4 „ Another brook, timber, ash, spruce, birch, fir and pine.
- S. 5° W 12 „ Brook coming from between the hills on the left of which runs the portage.
- S. 10 W. 5 „ Met a brook, land of a wet swampy nature, spruce, balsam, pine and tamarack.
- S. 0° 2' 22 „ Met a brook, clay bottom, a spruce and tamarack swamp, occasionally ash and cedar.
- S. 15° E. 12 „ Do. do. good land, but requires considerable draining, land rising.
- S. 35 E. 20 „ Still proceeding along the foot of the hills of no considerable elevation, observed similar elevations to follow on the opposite bank of the river. The soil is a black earth or clay beneath the mould, which is of considerable thickness, spruce, fir and tamarack, some black birch and ash.
- S. 40 E. 11 „ A high hill on the left, the land in that direction is of unfavourable quality, being generally composed of a sandy loam, which is timbered with spruce, white birch and pine.
- S. 35 E. 20 „ Still wet swampy land, yet of good quality, is timbered with spruce, ash, alders, balsam and black birch.
- S. 45 E. 10 „ To the basin at the foot of a fall on the river where a carrying place is made, the land in the vicinity of the fall is somewhat rocky, but the soil is generally good, being of an argillaceous red loam, ash, elm, fir, spruce, alders and pine.

- E. 3 chains— Rocky land.
- S. 45 E. 10 ,, Spruce, birch, pine,
- S. 55 E. 10 ,, To the falls of the Aulnais of about 12 feet. The river falls over a granite rock, inclining 75° N. W., the timber about this spot is spruce, balsam, poplar, some ash, white birch and pine.
- S. 75 E. 4 ,, Rocky land, spruce and fir.
- E. 4 ,, Ascent of a rock, granite, gniess.
- S. 2 ,, To the upper landing upon the bare surface of the rocks.

This portage having been effected by the voyageurs, and there being an end of the alders, we embarked into the canoe. The land I observed in our progress, to be a rich alluvial soil, timbered with elm, ash, spruce, fir and some pine and black birch, and as the river acquires greater width, we occasionally behold the aspect of the mountains, in a southern direction. Having ascended the river for about two and a half miles, where the Rivière des Aulnais is about two chains broad, we entered upon lake Tsiamagomishish.

Continued on for about one and a half mile, the lake thus far not exceeding ten chains in width, and the surrounding country being very horizontal and level, the soil of a sandy character, and offering but the aspect of tamarack and white birch and pine. Observed a narrow channel on the south shore, which led us to Lac Vert, Kasushikéomi, the "lake of clear water," and a name very well applied, as its waters are truly so clear, as that the bottom of the lake, which is clay, can be discovered at the depth of several fathoms, possessing at the same time a green tinge, that has given it the french name, the waters contrasting most singularly with those of Lake Tsiamagomishish, which are of a whitish color, nor possessing any degree of transparency.

Lac Vert is about a half a league in length, and about half a mile broad, exhibiting on its borders a boldness of scenery peculiarly attractive. A succession of high mountains range from the west along the south orders of the lake, leaving but a very narrow strip of cultivable ground between it and the foot of the mountains which are clothed with spruce, fir and pine. On the north side there is but a narrow tongue of land, which divides Lac Vert from Tsiamagomishish, on which is some tolerably good red pine, some white pine, spruce and white birch; the west end of the lake is low and level, for some considerable distance, the land is of good quality, and is well timbered with spruce, birch, cedar and fir, some pine. From thence is afforded a view of Lac Vert, and its surrounding scenery.

In passing the channel between the two lakes, I noticed a piece of bark folded, and set in a particular direction on a pole, on which was delineated by some indian hunter, the course that they had taken up some particular river, and which had most probably been left there as an information for some other indian hunters, who were about to join them. This is a mode of rendezvous used by the Abenakis and Algonquin nations, who very likely had visited this place, and were now returning towards their own grounds, as appeared by the direction of the rivers.

Proceeding up Lake Tsiamagomishish, about a mile beyond Lac Vert, in which distance the breadth varies from 8 to 12 chains, being quite indented with bays, and the land on its borders of a low swampy nature, being much of a sandy soil, and clothed with spruce, tamarack, fir and cedar, we followed a narrow channel which brought us to a small lake on the northern border about three quarters of a mile long, by 8 or 10 chains broad, which in its circumjacent land is likewise low, rising, however, gently on the north side towards a few hills in that direction. Near the entrance of this channel is a singular bluff of granite, nearly isolated in the lake, united to the main land, by a similar description of low swampy ground, as characterises the land about the lake. It is further contrasted with the adjacent country, as it is almost destitute of trees, the present growth being but a dwarf description of white birch, spruce and aspen; the appearance of the rock is much like that which composes the chain of mountains which continue eastward from Lake Vert towards Lake Tsiamagomi, having considerable level space between them and the borders of Tsiamagomishish.

Not knowing where the portage of Tsiamagomi was to be found, we continued up the lake to a small stream, which like the river of alders was so crowded with them, that it was out of all probability, the portage laid this direction, yet it afforded an opportunity of examining the land about this part of the lake, which is of a far better quality, and is timbered with ash, red spruce, fir, pine and alders. We therefore returned to a deep bay I had observed in our progress, wherein we found the landing of the Tsiamagomi portage, where we encamped at 7 o'clock, $3\frac{1}{2}$ miles from the lower end of the lake.

Thursday 11th—Observed the latitude by meridional altitude of the Pole Star, $48^{\circ} 1'$. The canoe having been carried across the portage at an early hour, we were enabled to proceed at 9 o'clock, and I made the following remarks of the courses, timber and soil. Beginning good land, soil an argillaceous loam, timbered with spruce, ash, pine, elm, poplar, black and yellow birch and fir.

N. 70 E. 4 chains—Top of hill, yellow birch, spruce and pine.

S. 45 E. 30 ,, Summit of rise, white birch, balsam, poplar and pine.

- S. 35 E. 6 „ Red and white pine, poplar and birch, sandy loam.
- S. 30 E. 12 „ Gradual descent, sand, timber the same as before mentioned.
- S. 35 E. 20 „ Light sandy coarse loam, white birch, aspen and pine.
- S. 30 E. 12 „ Descent, better soil, black birch, spruce, pine, fir and aspen.
- S. 40 E. 6 „ To the landing on the borders of lake Ouiqui, a small lake of about $\frac{1}{2}$ a mile in length, by $\frac{1}{4}$ in breadth. This lake forms the head waters of the Chicoutimi river, and offers in the distance the view of the lofty hills of Tsiomagomi.

Having passed the narrow communication between the lake, we came upon the beautiful lake of Tsiomagomi (Long Lake) and beheld the succession of lofty hills, which rise immediately from its borders, on the south side, contrasting with the lesser elevation of its northern border

Progressed about $2\frac{1}{2}$ miles—course S. 40 E. the lake expanding from $\frac{1}{2}$ to $\frac{3}{4}$ of a mile wide. The southern borders rising into hills of about 300 feet height, timbered with spruce, white birch and aspen, the land so rocky, and the cliffs appearing in many places, that this side of the lake is quite uncultivable. The northern side, although not as mountainous, presents, for upwards of $\frac{1}{2}$ a league, an iron bound coast, frequently rising in perpendicular cliffs of granite, whose base is bathed by the waters of the lake. Their summits are clothed with cypress and a stunted description of pine, sometimes called Norway pine.

Having come to the foot of a perpendicular cliff, rising about 100 feet above the level of the lake, and pending as it were over the canoe, we beheld another section of Tsiomagomi, discovering the chain of mountains in the distance, and exhibiting the features of the lake.

From this point or cliff the lake lies S. 62 E., and averages near a mile in width. Entered a small bay at noon, about 5 miles therefrom, on the northern side, and obtained a meridional altitude of the Sun, latitude $48^{\circ} 1'$. Here fragments of a rock were taken, strongly impregnated with magnetic iron ore, and much black sand washed upon the beach. The land on this side is more level, but it is quite of a sandy character, timbered with spruce, poplar, red pine and white birch. Crossed over on the opposite shore, and entering a large bay, came to the mouth of the river Upikubatch, which descends a succession of rapids to its entrance; leaving therefore the canoe there, I proceeded

on foot for about a mile up the river along the north-east bank, climbing in many places the abrupt and broken banks. The south side is bounded by a succession of hills of a rocky nature, which appear to stretch for some distance back from the river, and following a general direction with it.

Opposite to the mouth of this river, is a large island or presqu'isle, of near $\frac{1}{2}$ a league in length, of an alluvial formation, and covered with alders, this I should believe overflows in spring. There are likewise three small islands between it and the shore, of the same description.

For the same reasons that I could not explore the Belle Rivière, I was prevented ascending the Upikubatch, which, however, from the aspect of the country, was far from repaying the attempt with any satisfactory result. Having left the mouth of that river, which is surrounded by rocky mountains, we passed several high cliffs, rising upwards of 300 feet high, which leave at their base a small strip of level land that reaches the border of the lake. But the hills strike again the lake, opposite a considerable stream, which flows into the lake, on the northern side, which I ascended for about a mile.

The land on this river singularly contrasted with that of the Upikubatch, as this river flowing into the lake with a gentle current, lays through a wide march, which is bordered on either side by a low spruce swamp. The red tinge of the water would indicate its traversing for a considerable distance in the interior a similar tract of country.

From thence we reached Pointe au Sable, at 6 o'clock, where we encamped beneath a large pine tree, which, during the night sheltered us in a great manner from a gale, which blew with surprising force from the north-west. Little can be said of lake Tsiamagomi, in an agricultural point of view, although much of the sublime and beautiful scenery it presents, the linked succession of craggy hills, which border the south side of Tsiamagomi, thinly clothed with spruce, white birch, and stunted red pine, remove all possibility and means of settlement on that side. On the north shore the land for about six miles from lake Ouiqui is likewise unfit for culture, as it rises into cliffs, whose summits are wooded with small red pine spruce and aspin, from thence to the river on the north side, the land although of a sandy character, may, in some parts be susceptible of improvement. It then becomes of a rocky hilly nature. What it is in the interior, can best be described by persons who have explored it.

Pointe au Sable is a Presqu'isle of alluvial land, formed at the entrance of a river, which enters the lake on the north side. Opposite to it on

the south side of the lake, a small stream falls into the lake, from between the high mountains, which, form its bed and the cascade at its entrance, affords a well calculated site for a mill and similar establishments, while Pointe au Sable would be an excellent situation for a village, by its advantageous position on the lake.

Friday 12th.—Although the skies portended rain, yet the wind had abated, and we left the point at 9 o'clock, A. M. Our course laid down the centre of lake Tsiamagomi, from Pointe au Sable, south, 68 E., which preserves still the same feature as has been described. Keeping a straight forward course, we reached the depth of the lake, which is surrounded by high rocky hills, some of which discover barren cliffs, rising about 200 feet elevation. From hence can be observed the features that distinguish the country on the borders of Tsiamagomi, for a distance of nearly 20 miles, being about the length of the lake.

Not having found the outlet of the lake, we coasted along the northern borders towards a considerable bay, that had been noticed on that side in our way to the head of the lake, opposite to which, on the south shore, a river called Upika, enters very rapidly from between the high mountains that form its bed. And having doubled a high rocky point which overlooks a partial continuation of the lake, we perceived a gentle current flowing north-eastward, which brought us to the mouth of the Chicoutimi river, which signified, "further out it is still deep," and then almost immediately to the head of the Portage des Roches. The length of lake Tsiamagomi being about 19 miles from lake Ouiqui to Portage des Roches, and its average breadth near a mile.

The Portage des Roches is about 200 yards long, leading over the rocks, which, in spring, are covered by the river. Here the Chicoutimi falls about 15 feet to the lower landing, at the basin, which is surrounded by high mountains.

Leaving the basin, which is near three quarters of a mile in length, we thence descended the Chicoutimi river, which runs down with considerable swiftness, for about one and a half mile. The river is embanked by high rocky hills, rising to about 200 feet elevation. Then the mountains terminate, resting about the region of Tsiamagomi. The land on the banks then becomes level, and appears to improve, being timbered with spruce, fir, pine, a few elms and cedar, occasionally on the left when the fire has burnt up the vegetable mould, it discovers a rocky barren soil.

The Portage of l'Islet is then reached, being $3\frac{1}{2}$ miles below the Portage des Roches, on a general course N. E. therefrom.

The general course of the portage de l'Islet, is about S. 75 E. 20 chs.

to the lower landing, lying through a good quality of land, its soil being a rich dark loam, timbered with black birch, spruce, pine, ash.

The river is divided into two channels, by a large island, the south-west channel is broken by cascades and rapids, while the north eastern is but a long rapid, which is frequently shot down with canoes.

From the foot of this portage, we reached the Beau Portage two miles below it, in which distance, the river is, on average, about four chains wide. Its right bank in the first instance is high and rocky, while its left obtains a good quality of soil, being timbered with elm, ash, spruce, birch and pine. On approaching the Beau Portage which lies on the right bank, the land acquires a light character of soil, being a coarse yellow loam, possessing a great proportion of sand; it is timbered with spruce, white birch, pine and some elm.

Having effected this Portage, which is about 250 yards long, lying thro' but a very tolerable description of land, being chiefly a sandy loam timbered with white birch, red pine, poplar, and spruce, and which avoids the cascades, that are about 20 feet total elevation; we continued the descent of the Chicoutimi, for $7\frac{1}{2}$ miles to the Portage de l'Enfant; its banks exhibiting in this distance much improvement in the soil and timber, the former is generally an argillaceous loam and the latter spruce, elm, ash, fir, pine, black and white birch and some cedar. The river which varies from 4 to 6 chains width is occasionally interspersed with well timbered islands, and are most commonly alluvial. The general course of the river between Beau Portage and the Portage de l'Enfant, is about N. N. W. At one particular bend we came by a canoe, containing an Indian family; their astonishment at beholding a canoe of strangers, was singularly expressed by a smile or rather a silent laugh, for which peculiarity the Montagnais nation is distinguished by the Indian name Papinashuah, signifying laughers or sneerers. I attempted to address them a few words which they did not appear to understand, and we continued our course of the Chicoutimi River.

The Portage de l'Enfant about 200 yards long, is so called from the circumstance of a canoe, containing an infant, having loosened from its moorings, negligently secured at the portage, having descended without the least harm happening to the infant, the falls of l'Enfant, which are between 40 and 50 feet elevation, taking the cascades collectively.

The path lies over tolerably good land, its soil being a yellow loam, timbered with spruce, ash, cedar, poplar, elm and pine.

From the lower landing, it is but 20 chains across the basin, at the foot of the falls to the Portage du Chien, on the right bank of the

river. This portage, which is also about 200 yards in length, leads over a very good discription of ground, and avoids a cascade of about 15 feet in heighth. It is timbered with cedar, fir, birch, red spruce, white and red pine.

Having embarked in the canoe, we shot part of the rapids. Observed in our progress down the river, that the land preserves that character of fitness for settlement, which it has more or less exhibited from the Portage de l'Islet, and likewise a few streams which discharge themselves on either bank of the river.

Reached the landing at the portage, which is vulgarly called Ka-Ka, $1\frac{3}{4}$ mile, at the head of a high fall, on the edge of which is a small island that divides the fall into parts.

It being too late to pass this portage, we encamped at the landing, having performed this day, about 21 miles, and effected five portages.

Saturday 13th.—Penetrated about two miles south-eastward over very level ground, and observed the excellent description of its soil, being a clayey red loam, occasionally intermixed with small gravel beneath a rich vegetable mould, a fine growth of mixed timber woods this tract, such as ash, elm, fir, yellow and black birch, balsam, spruce, some bass, maple and cedar. This level tract appears to have great extent eastward and south-eastward.

Having returned to the party, who had already effected the transport of the few stores that remained and the canoe, we left the foot of the falls, which are about 45 feet heighth, and descended to the portage of Chicoutimi, above the falls; where the river contracts to less than 25 yards, while opposite the portage the river is about 5 or 6 chains broad. This portage is about a mile below Ka-Ka; the land in that distance is of excellent discription, the timber being elm, ash, pine, fir and some white birch.

Course of the Portage Chicoutimi.

Beginning ascent.

S. 45 E.	3 chains	—Top of hills.
15 E.	7 "	Gully and brook, good land, clay and loam.
45 E.	6 "	Maple, spruce, black birch and pine.
S. 72 E.	8 "	A high mountain on the left, broken rocky ground
N. 35 E.	6 "	Spruce, white pine.
N. 20 E.	10 "	Do. do. rocky land.

10 E. 10 Chains—	Along the base of a rocky mountain, white birch, spruce and poplar.
North 12 ,,	Land better, black birch, spruce, fir, some poplar; end of Mountains.
N. 10 E. 8 ,,	Good land, mixed timber, clayey loam, black birch, spruce, maple, some cedar and pine.
N. East 12 ,,	Descent on the right.
S. 80 E. 12 ,,	Rocky land, ascent on the right.
N. 80 E. 8 ,,	Poor land.
N. 45 E. 10 ,,	Portage leading over bare rocks.
N. 65 E. 10 ,,	Small balsam, spruce and pine.
N. 45 E. 6 ,,	Gradual descent, maple.
N. 75 E. 6 ,,	Bass, spruce and balsam.
N. 45 E. 8 ,,	Land descending; middling.
N. 80 E. 8 ,,	Balsam, fir and maple.
S. 80 E. 4 ,,	Red pine, poplar, spruce.
N. 45 E. 4 ,,	Top of a high hill descending.
N. 78 E. 16 ,,	To the edge of the clearing of the King's Posts Establishment.

I now beheld from an eminence, which overlooks the harbour of Chicoutimi, the noble stream of the Saguenay, flowing in majestic silence towards its confluence with the St. Lawrence. Although not possessing here the bold features of Tsiamagomi; still the great breadth of the river, added to the striking scenery, the group of buildings in the foregrounds, and the small solitary chapel on the adjacent eminence, was a combination of objects that amply repaid us for the privation we have suffered in traversing about 500 miles of country, crossing 64 portages, and risking our lives repeatedly, in the unavoidable descent of many bad rapids, to reach this arm of the sea.

Descended to the post, and were received at the house by Mr. Barnston, as Mr. Andrews, the resident clerk of the post, was absent at Quebec. Learnt that Mr. Wagner and Mr. Proulx the surveyor, had left the post only a few hours before our arrival, on their way to ascend the river St. Jean, which falls into the Saguenay, and cross the country to St. Pauls or Mal Bay. Employed the remaining part of the day in effecting the following recapitulation of distances, from the mouth of Kushpahigan or Belle Rivière, to the post of Chicoutimi, being exclusive of the length of the minor portages, which amount together to two miles.

TABLE OF DISTANCES.

Mouth of Kushpahigan or Belle Rivière.

6 Portage of Belle Rivière, 500 yards.												
$8\frac{3}{4}$	$2\frac{3}{4}$	Mouth of Rivière des Aulnais.										
$10\frac{3}{4}$	$4\frac{3}{4}$	2	Falls of Rivière des Aulnais and Portage, 700 yards.									
$16\frac{3}{4}$	$10\frac{3}{4}$	8	6	Head of Lake Tsiamagomishish or Port. Tsiamagomi.								
$17\frac{3}{4}$	$11\frac{3}{4}$	9	7	1	Lake Ouiqui $\frac{1}{2}$ a mile, Tsiamagomi.							
$37\frac{3}{4}$	$31\frac{1}{4}$	$28\frac{1}{2}$	$26\frac{1}{2}$	$20\frac{1}{2}$	$19\frac{1}{2}$	Portage des Roches, 200 yards.						
$40\frac{3}{4}$	$34\frac{3}{4}$	33	30	24	23	$3\frac{1}{2}$	Portage de l'Islet, 440 yards.					
$42\frac{3}{4}$	$36\frac{3}{4}$	34	32	26	25	$5\frac{1}{2}$	2	Beau Portage, 250 yards.				
$50\frac{1}{4}$	$44\frac{1}{4}$	$41\frac{1}{4}$	$39\frac{1}{2}$	$33\frac{1}{2}$	$32\frac{1}{2}$	13	$3\frac{1}{2}$	$9\frac{1}{2}$	Portage de l'Enfant, 200 yds.			
$50\frac{1}{2}$	$44\frac{1}{2}$	$41\frac{1}{2}$	$39\frac{3}{4}$	$33\frac{3}{4}$	$32\frac{3}{4}$	$13\frac{1}{4}$	$3\frac{3}{4}$	$9\frac{3}{4}$	$\frac{1}{4}$	Portage du Chien, 210 yds.		
$52\frac{1}{4}$	$46\frac{1}{4}$	$43\frac{1}{4}$	$41\frac{1}{2}$	$35\frac{1}{2}$	$34\frac{1}{2}$	15	$11\frac{1}{2}$	$9\frac{1}{4}$	$2\frac{1}{4}$	Portage Ka Ka, 200 yds.		
$53\frac{1}{4}$	$47\frac{1}{4}$	$44\frac{1}{2}$	$42\frac{1}{2}$	$36\frac{1}{2}$	$35\frac{1}{2}$	16	$12\frac{1}{2}$	$10\frac{1}{2}$	$3\frac{2}{4}$	1 Portage of Chicoutimi.		
$55\frac{1}{2}$	$49\frac{1}{2}$	$46\frac{3}{4}$	$44\frac{3}{4}$	$38\frac{3}{4}$	$37\frac{3}{4}$	$18\frac{1}{4}$	$14\frac{3}{4}$	$12\frac{3}{4}$	$5\frac{1}{4}$	$5\frac{3}{4}$	$2\frac{1}{4}$	Chicoutimi.

Making a Total distance of $55\frac{1}{2}$ miles from Lake St. John to Chicoutimi.

Sunday 14th.—The day proving favorable for observation, I accordingly prepared for a set of equal altitudes and azimuths, to ascertain the latitude and variation.

The forenoon observations being taken, I visited the chapel with Mr. Davies and the voyageurs. It stands on a rising ground on the point which projects into the basin at the foot of the falls of Chicoutimi; its length is about 25 feet at most, by 15 wide. The altar, which is plain, and the pictures or engravings, which hang around the interior of the chapel evidently bear the hand of time. The tombstone, with the inscription at great length of the death of Father Cocar in the last century, was broken in several places, and the words of the inscription, which is in Latin and so ill connected, that with much difficulty it can be understood.

A Catholic Missionary visits the Chicoutimi twice a-year, and teaches the natives the first principles of the religion, of which

the Jesuits have framed a catechism in the Cree language, which is circulated amongst them.

The King's Posts' Company Establishment, situated at the eastern extremity of the peninsula at the confluence of the Chicoutimi River and the Saguenay, consists of a commodious dwelling-house for the resident clerk or agent, which is situated on a rising ground commanding a view of the Saguenay and the harbor;—a store, judiciously placed near the landing—a bake-house, stables and barn—several pieces of tilled ground, and a garden furnish the Post with various vegetables, potatoes principally, as also some luxuries for the table.

The land about Chicoutimi is principally comprised of a clay soil, containing rather an insufficient proportion of loam or sand to render it generally very good; yet that soil is easily corrected when the materials for manure are at hand.

Having obtained a meridional observation and completed the afternoon altitudes and azimuths, I found the latitude of Chicoutimi to be $48^{\circ}-25'-5''$, and the mean variation by these instruments $20^{\circ}-15'$ west: so great a difference with the variation observed at Lake St. John can only be attributed to local causes, as some very attractive mineral in the rocky hills lie back of the post. These observations were corroborated by altitudes of the Pole Star and other circumpolar stars.

Monday, 15th. Penetrated about 5 miles in a direction from Cape St. François below the Post, in a course S. S. easterly, towards La Baie des Has! traversed in that section an excellent tract of land composed of an argilaceous loam beneath a rich vegetable mould, affording a growth of mixed timber, namely, ash, fir, black birch, balsam, poplar, white birch, pine, some maple and basswood.

Passed a small lake and crossed several brooks which spread fertility in their course, and discovering in the ravines or gullies which they form, an indurated stratum of blue clay and occasionally some white soft marble, the brooks containing in their beds a quantity of small gravel.

There is much similarity in the general surface and character of this tract and that which I explored at the Portage Ka-Ka, and prevailing along the banks of the Chicoutimi River.

On my return towards the Post I observed a large stream on the fourth side of the Saguenay, which I ascended to the foot of a fall, where a mill has been erected by the North West Company where they held the King's Posts.

The causeway, which is 100 yards from the landing to the mill, is yet tolerably good, but the mill is going fast into ruin; the aqueduct which leads from the head of the fall to the over-shot is quite unfit for use as well as other parts of the works which are intended to drive two single saws; the frame with some repair might yet answer for a few years longer. Having taken a hasty sketch of the falls, and as night was fast approaching, I returned to the Saguenay and reached the Post at 8 o'clock P. M. more than usually fatigued with the toils of this day.

Tuesday, 16th. Being desirous of acquiring a knowledge of the nature and character of the land along the Saguenay and its course and size to the Rivière des Terres Rompues, I ascended on foot along the fourth shore and part along the north shore of the Saguenay, taking its general course, which is about W. and by N. to the River des Terres Rompues, and near two leagues above the Post of Chicoutimi, preserving an average breadth of half a mile.

The northern bank is formed of craggy broken hills, commonly clothed with spruce, small red pine and white birch, leaving however in some places a strip of level clay land between them and the borders of the river. The fourth shore exhibits an horizontal surface and land of an excellent quality, discovering a clay loamy soil timbered with spruce, black birch, pine, fir, cedar, ash and elm. The interior country on both sides of the Saguenay appears well irrigated by the numerous small streams which I crossed, generally tinged with the colour of the route they have traversed.

At the River des Marais the Saguenay ceases to be navigable, as thence taking about a fourth-west direction it becomes broken by rapids and full of rocks; the high tides rise to 7 feet, and at the Portage des Terres Rompues, about half a mile above the confluence of that River with the Saguenay, the tides are very little perceptible; two miles above this portage the river which is much indented with bays, falls of rapids, and the land on its banks issuing into rocky hills, there contracts to about 10 chains wide, but it was impossible to ascertain that fact or to explore beyond a river which I conceived is the River des Terres Rompues, (broken land)

which enters on the N. W. bank with a succession of falls and cascades. I should have been glad to have seen the falls of the Saguenay, which are frequently heard at the Post, but which none have yet visited.

Returned to the Portage which I explored for about a mile through a very good description of land; its soil however for the greater part is clay and occasional intervals of rich loam, the timber is mixed, being ash, spruce, fir, cedar, maple, bass, some very good white and red pine.

Having come to the borders of a high bank of clay, upwards of 150 feet above the bed of the small River des Marais which runs at its foot, I beheld a succession of similar clay hills for a considerable distance, whose snowy whiteness contrasts with peculiar effect with the spruce, fir and pine, that crowd their summit, and resemble lava thrown by some eruption, which I believe has been the original creation of them.

Returned to the Post at 8 o'clock.

Wednesday, 17th. Having examined the Falls of Chicoutimi, which are about 40 or 50 feet in height, rushing thro' a contracted channel over the rocks that interrupt its rapid course to the basin which forms part of the harbor of Chicoutimi, I proceeded to take soundings of the harbor at the full ebb of the tide, and found that however safe it might be in respect to wind and moorings, it could not answer for ships of considerable draught unless they ground at low water, for vessels cannot reach the basin of the Chicoutimi River that draw more than $1\frac{1}{2}$ fathom, on account of the narrow channel between the shoals that set out from Pointe aux Trembles and the Chicoutimi Point on which I have sounded from 1 to $1\frac{1}{2}$ fathom, while in the channel there are at most but two fathoms sand and clay bottom. Outside of the shoal, which extends about 300 yards into the stream of the Saguenay, vessels can anchor in 3, 4 & 5 fathoms near Cape St. Francois, which I suppose is the extent of the harbor about a mile below the Post. Vessels are exposed to a very strong current at the ebb tide, which would require their being moored to the shores besides the anchor.

From the Cape to make the Post the course is W. and by N. and when abreast of Pointe-aux-Trembles to enter the small channel, S. W. & by S. $\frac{1}{2}$ W bearing upon Chapel Point, approaching within a few yards of the shore.

The tide rises between 16 and 18 feet perpendicular in four and a half hours of flood; the harbor and this part of the Saguenay is frozen over about the 1st or 5th December, until about the 10th or 15th of May. Chicoutimi, by its central point between Lake St. John and the St. Lawrence, its harbor and its locality with extensive adjacent and cultivable lands, is likely to become the market for the trade of all this section of country.

It was 5 o'clock P. M. when we bade farewell to the hospitable inmates at the Post, and proceeded down the River for Tadoussac.

Having reached the River au Moulin, about 2 miles below the Post, the Saguenay shapes its course about N. E. by N. $\frac{1}{2}$ N. near 3 miles, acquiring considerable width, which is about half a mile at the confluence of this small river. Its N. W. bank, assumes a bold hilly aspect, while the south-east bank is generally more horizontal and appears to offer some very good land.

In a north-east direction is seen a chain of prominent mountains of no inconsiderable elevation, stretching from the north-west, then bending in its general direction with the course of the Saguenay.

Passed River Caribou entering from between the hills on the north-west side appearing to be a large stream, which I supposed might have been explored by Mr. Proulx; I therefore proceeded on to Pointe de L'Islet, from whence observing a light on the opposite side of the River bearing E. and by N. we made directly towards it as night was fast approaching; the moonshine with its resplendent lustre on the broad expanse of the Saguenay, the scene has been seldom equalled wherein a variety of objects combined to excite the admiration and interest of the Canadian in his native country, and to behold them without regretting that they had not been earlier known and appreciated.

In this train of reflection we made the landing at the meadows, from whence numerous voices greeted the approach of their brother voyageurs.

Few imagine the comforts of a wigwam which we now entered, by the hospitality of one Jerome L'Onge, who with his family a Montagnais native and their children formed the amount of their domestic circle round the fire, which lighted with peculiar effect on the countenances now collected around it.

From this stream it is about 5 miles to L'Ance et Rivière la Trinité on the south shore, which appears to afford safe harbor for boats and sloops and to possess some cultivable ground in the depth of it, the hills sloping more gradually to its margin, while at its entrance Cap La Trinité rises to an elevation of not less than 800 feet; part of it is cut perpendicularly with the surface of the Saguenay.

We then came to L'Ance St. Jean, which is likewise on the south shore, about $6\frac{1}{2}$ miles below the Trinité, which appears a spacious and good harbour for sloops.

The gradual swell of country that surrounds the harbour gives a favourable aspect to the land, and I believe that some thousand acres might be found susceptible of cultivation.

On the northern side of the Saguenay several small streams descend the abrupt faces of the hills, but affording no recess or harbor for boats exposed to adverse winds.

The Petit Saguenay is likewise on the south shore about 4 miles below L'Ance St. Jean, and offers a convenient harbor for boats.

The general course from the Ruisseau de la Trinité to the Point aux Ecrits or Petit Saguenay, is S. 35. E. 15 miles. From this place the aspect of the hills, altho' still abrupt and barren, are not so elevated. Here and in several other parts of the north shore I perceived a great magnetic attraction on the needle, and therefore conceived the rocks which comprise the hills are either strongly impregnated with iron ore, or possess of their nature that attractive influence on the needle.

Having passed two small rocky islands nearer in with the north shore, we came to L'Isle St. Louis, which is an elevated mass of granite rock thinly wooded with fir, spruce, white birch and poplar; it is about 60 chains long and $\frac{1}{2}$ a mile wide; close in with the south-east end of it, are also two small rocky islands. The Saguenay is here about $1\frac{3}{4}$ mile wide affords a safe harbor under shelter of the hill, and vessels may be moored in perfect security near L'Isle St. Louis.

We thence made the entrance of the River Ste. Marguerite on the north side of the Saguenay. It was low water, and I observed

a reef of rocks stretching across it; at high water schooners might find it a very safe harbor here, and within the bay to the mouth of the river, which appears to be a considerable stream.

As we were unable to find any fresh water for encamping without going far into the depth of the bay, which is an extensive salt marsh, we proceeded on favored by the perfect calmness of the river and a fine moon light, which was however frequently concealed by the boldness of the hills and cliffs which still continue to form the leading features of the Saguenay, whose width on leaving the bay of St. Marguerite contracts to less than a mile. Having descended for about two miles without any change of scenery, we chanced to come by a small brook rippling down the face of the cliff; at which we filled with fresh water the spare vessels we had in the event of being obliged to pass the night in the canoe; but having discovered a less steep part of the bank we attempted a landing, which was effected with much trouble. The canoe and baggage were carried about 25 feet up the bank to clear the flood tide; a fire was then lighted of the wood that the previous flood had left on the banks, and after listening awhile to the hobgoblin stories of the men whom the chillness of the night had collected around it, we sought a resting place among the rocks.

Monday, 22d. We were awakened at 2 o'clock A. M. by the noise and confusion which caused the rising tide, obliging the men to remove the luggage and to find higher births. By break of day, while the tide was at a convenient height for launching the canoe, we set out from our miserable encampment. Having passed the Ruisseau des Groses Roches which enters the Saguenay on the N. E. bank, where I observed a lesser elevation of the land, the river bends its course south, passing Riviere St. Etienne, which discharges itself on the west side about a mile below the latter. Thence the Saguenay shapes its last course S. E. by E. to its confluence with the St. Lawrence. The banks are in many places cut perpendicular with the surface of the river, whose width averages near a mile. Passed La Baie St. Catherine on the north side, which but for the anchorage would appear to form a harbor for vessels, which would be sheltered from every wind by the hills that surround it.

We then reached the mouth of the Saguenay which is about 60 or 70 chains broad, and which possesses some very striking and bold features. Having then doubled the Point of L'Islet, we entered the harbour and landed at Tadoussac at 8 o'clock A. M.

This establishment is the most extensive of the King's Posts, consisting of 13 buildings, including a chapel. The residence of the agent of the Company is a neat one story building of commodious size, having a very tolerable garden, which part of it producing with other cultivated spots about the place, the vegetables for the inhabitants of the Post. The chapel is of about similar dimensions as that of Chicoutimi; its red roof and spire with the surrounding buildings, the range of small field pieces on the edge of the plain which extends to the foot of the mountains that rise to considerable height, in many places discovering the naked rocks or exhibiting the destructive effects of the fire that has thinned the woods which clothed their summits, leaving occasionally the tall pine clipped of its branches soaring above the dwarf growth of spruce and birch that has succeeded to the loftier timber. The beautiful growth of fir trees rising in as many cones upon the terrace, which I believe was once the seat of the fortifications of the French, situated on the west side of the creek which runs down from the hills, whose craggy summits contrast with peculiar effect with the firs below them, combine to form a very pleasing scenery from the River in coming up harbor or doubling the point of L'Islet from the Saguenay.

Observed the latitude of Tadoussac to be $48^{\circ}.5'.54''$ and the variation of the compass $16^{\circ}-23'.45''$ west. Its harbour is formed by the peninsula or L'Islet, which separates it from the Saguenay on the south-west and the main shore on the north-east, about a third of a mile across and near half a mile in depth at low water, which rises twenty-one feet perpendicular in $5\frac{1}{2}$ hours tide; the beach, on which there are extensive salmon fisheries, extends out a considerable distance, materially contracting the dimensions of the harbor: It is however secure and under shelter by the surrounding hills of most winds generally prevalent in the St. Lawrence, except the southerly gales which may affect vessels at flood tide, as the small White Island and Batture-aux-Allouettes are then covered, and which shelter them at ebb tide.

The entrance of the channel to the harbor of Tadoussac or to the Saguenay is intricate at the ebbing tide, and for vessels descending the St. Lawrence, which must come almost abreast of the light-house on Green Island, bearing S. E. from the harbor, and then pass to the north of White Island at the extremity of the Shoal aux-Allouettes and clear at the same time

the shoal which sets out some distance from the north-east point of the harbor; it is far less intricate for vessels coming up from below. A light-house placed upon Red Island bearing _____ miles would very essentially facilitate the entrance into the harbor of Tadoussac, which at the same time would indicate the course to make the north channel of the St. Lawrence. The harbor is open for vessels and free of ice from May until the middle of December.

At the Post I had occasion to see several of the natives of both sexes of the Montagnais nation who inhabit the immense tract of country lying from the St. Lawrence northward to the Hudson's Bay territory. The dress of the females is singularly varied for the colours they bestow upon it: it usually consists of a loose piece of blue clothed trimmed with scarlet, which they use for the lower garments, and a mantle of printed calico; their hair is rolled up on each side of the head and twisted round with red tape or ribbon, which latter they are very partial to, a conical shaped cap of red, blue, green and white cloth, is generally wore, from beneath which a long queue of hair also twisted round with red tape, hangs down her back. They smoke and drink spirits like the men, whose ordinary dress is very slothful, consisting generally of some old blue cloak or frock, or a calico shirt and linen trowsers. The Montagnais or Mountaineer Nation—(Cree Language—"laughers or sneerers,") are generally a harmless people. They have no fixed habitation, but wander on the limits assigned among themselves as hunting grounds. They live by hunting and fishing, which not unfrequently failing, particularly of late years, is one of the causes together with an inordinate use of spiritous liquors and the occasional introduction of the small-pock, which has considerably reduced their numbers.

They have a repugnance for cultivating the earth, depending on other resources for subsistence, and have no tradition among them other than a faint recollection of the order of the Jesuits, who taught them the first principles of religious worship.

The native fastnesses of the Saguenay country in a military point of view, render it impregnable by a foreign enemy, by reason of its vast impenetrable barrier of mountains, lakes, rivers and swamps that lie between it and the St. Lawrence. Its key is undoubtedly Tadoussac. A strong fortification on the peninsula commands both the harbour and the entrance to the Saguenay,

RECAPITULATION and TABLE of Distances from Chicoutimi to Tadoufsac, and of remarkable places on the Saguenay River :

TABLE OF DISTANCES.

Chicoutimi. <i>to</i>											
7½	The Meadows.										
12½	5	Pointe aux Roches.									
18	10½	5½	Cap à L'Est, or La Baie des Has !								
32	24½	19½	14	Ruisseau de la Trinité, N. E. side.							
37	29½	24½	19	5	River and Harbor of La Trinité.						
43½	36	31	25½	11½	6½	River and Harbor of St. Jean, S. W. side.					
47½	40	35	29½	15½	10½	4	Petit Saguenay.				
52	44½	40	34	20	15	8½	4½	Island of St. Louis.			
54	46½	42	36½	22	17	11½	6½	2	Rivière St. Marguerite.		
58	50½	48	10	26	21	14½	10½	6	4	Rivière St. Etienne.	
63	60½	56	50	36	31	24½	20½	16	14	10	Tadoufsac or mouth of the Saguenay.

Tuesday, 23d. Left Tadoufsac at 10 o'clock for Quebec. In crossing from L'Islet, the mouth of the Saguenay, we were exposed to the surf, called by the mariners "Rangs de marrées ou clapotage," that causes the strong current of the river meeting the rising tide of the St. Lawrence. It was blowing fresh from the south-west and not without much exertion and skilful management of the canoe we effected the doubling of Pointe-aux-Allouettes, and then landed at Pointe aux Bouleaux, about two miles above Tadoufsac. There I observed an excellent tract of land extending to the foot of the hills, and from the Baie des Allouettes to the Riviere aux Canards, which we passed after the wind had a little abated, then the shores became bold, rising into a steep rocky mountain. Reached a fisherman's hut on the rocky point of La Baie des Echaffauds or Basques, where we encamped at six o'clock.

The Baie des Echaffauds is about a mile deep and surrounded by hills. At its entrance are two rocky Islands, the largest thinly timbered with fir and white birch.

Wednesday, 24th. Set out at 9 o'clock with a thick fog, rendering it necessary to keep close in with the shore, which is an iron-bound coast, and with much trouble we cleared the Shoals of La Baie des Rochers. The sky cleared up with a strong south-westerly wind which obliged us to put into a fisherman's hut on the west side of Woman's Port; a considerable shoal and reef of rocks renders its entrance dangerous at low tide; a small stream enters into it from between the mountains which form the character of the coast.

Passed the Rivière Noir, the eastern limits of Murray Bay, and then reached Port au Parsley at about half after four o'clock, when the wind rising too strong to enable us to double the Point, obliged us to await more favourable weather.

Thursday, 25th. We could not leave Port au Parsley before noon as the wind still continued fresh. Reached the Parish of Mal-Baie at half after 7 o'clock P. M.; the night was dark and observed much lightning to the southward.

Friday, 26th. The rain prevented our proceeding before 9 o'clock, at which time we left Mal Baie, and at 2 o'clock passed the beautiful settlements of the Eboulemens, whose verdant fields crowning the summits of the sloping hills, which rise amphitheatrically from the St. Lawrence, obtain a pleasing effect in the traveller.

The wind about 4 o'clock rising strong from the north-west, we kept in for St. Paul's Bay; not being able to reach the village owing to the flat and sand shoal that covers the bay at low water, we bore upon the west point, which we reached at half after six o'clock, and encamped on the side of the road.

Saturday, 27. Set out at a quarter to 8 o'clock A. M.; fine weather, but still a strong S.W. gale, which obliged us to put in at the Seigniory of La Petit Rivière, at 10 o'clock. I set out on foot to pass the capes, but stopping at a small settlement and the last of the Seigniory, occupied by the fishermen who overlook their extensive eel fisheries, I was advised not to make the attempt as the approaching flood tide would shortly overtake me. Mr. Davies and the voyageurs could not venture out until 6 o'clock when they made this place; where we encamped on the shore.

Sunday, 28th. Started at 6 o'clock, passed the Capes Maillard

and L'Tourment ; we reached the first settlement of St. Joachim where I purchased provisions for the men, as we had now exhausted the stores that had been furnished us at Chicoutimi.

A favorable breeze blowing from the N.E. enabled us to reach the settlements on the Island of Orleans opposite Château Richer, where we encamped at 5 o'clock.

Monday, 29. Left the Island at 7 o'clock and landed at Hunt's wharf, Quebec, at about 11 o'clock : the St. Maurice expedition having performed from the 21st August a route of nearly 800 miles circuit, and with the exception of 90 miles circumnavigated in a bark canoe, the space containing a superficies of 12,190 square miles.

Given under my hand at Quebec,
this 24th day of December 1828.

JOS. BOUCHETTE, Junr.

(True Copy.)

Depy. Sur. Genl.

JOURNAL of the Exploration of the Saguenay, and other parts of the Crown Lands on the North side of the River Saint Lawrence.

HAVING received orders from Andrew Stuart, Esquire, one of the Commissioners, in person, to be in Quebec on the first day of the month of August, in order to accompany this Expedition; I left my house, at St. Mary, Nouvelle Beauce, on the 31st July, 1828, and proceeded to Quebec, where I remained until the 6th day of August, waiting for the schooner, which was to carry us to Tadousac.

6th August.—We left Quebec, and reached the port of Tadousac on the ninth, at half past twelve. Here we caused our provisions to be landed from the schooner; and on the 10th left Tadousac on our way to the post of Chicoutimi, which is about twenty leagues from the mouth of the Saguenay. The same day we reached the place called La Boule, where we met so strong a current with the ebb tide, that we were unable to double the point of La Boule, with the boat, and were compelled to enter the bay, and encamp there.

11th.—I left the boat and went on board a canoe; this evening we encamped on a small rock about a mile and a half above the Coquet Islands, and on the north bank of the Saguenay. From the mouth of the river (Saguenay) to this place, the banks are formed of high and steep rocks, which are almost all of a round shape.

12th.—I went into a little bay about three miles above St. John's bay, but on the opposite side of the river, where I was obliged to land, on account of the wind, which was west, and too strong for the canoes, and was detained until 3 P. M. At noon I made an observation at this place, for ascertaining the latitude, and found it to be $48^{\circ} 14' 2''$ north. The variation appeared to me to be 18° west; but I am of opinion, that it is increased by beds of magnetic stone, which are found in the rocks here, and of which I have gathered specimens, weighing from $\frac{1}{2}$ to $\frac{3}{4}$ of a pound, possessing the power of drawing the magnetic needle aside, from $1\frac{1}{2}$ to 2 degrees, after it had settled itself to the north point. At 3 o'clock the wind having gone down a little, I again embarked and proceeded as far as a bay opposite that called Trinity Bay: here I found the gentlemen who were proceeding in the boat, and who were detained by the ebb tide. The tide rises here 21 feet perpendicular. At half past eleven we re-embarked and continued under way during the remainder of the night.

13th.—By ten A. M. I had got as far as Sandy Bay, where I was detained by the west wind till two P. M. The latitude of this place is $48^{\circ} 19' 9''$ north. At two P. M. the wind having abated considerably, I went on again, and reached the small bay above West Cape. There I found the gentlemen of the party who went in the boat, and encamped with them.

14th.—We reached the post of Chicoutimi, all at the same time.

15th.—Andrew Stuart, Esquire, one of the Commissioners, took counsel concerning the most expedient and fitting measures to be adopted by the Expedition.

16th.—I received my instructions from the said Andrew Stuart, Esquire, dated the same day, at 2 P. M. : and in pursuance thereof started with 2 voyageurs only, at 3 P. M. to explore Ha Ha Bay, the country round the said bay, and that in the neighbourhood of Chicoutimi, according to the tenor of my instructions. On the same day I reached Les Prairies, about nine miles from the post of Chicoutimi, where I remained till the following morning, and employed the men in sewing together a few yards of canvas, to make ourselves a sort of tent during our travels.

17th.—I proceeded to West Cape, at which point I entered Ha Ha Bay, following the north shore, which is bordered by high and barren rocks, continuing for about five and a half miles; after which they run in a northerly direction, and by so doing give a greater width to the bay, to the extent of about a mile on the north side. A bay is thus formed of about 2 miles wide at its mouth, and running one mile inland, which would afford complete shelter for a great number of vessels of any size. The anchorage is very good, and varies in depth from 15 to 35 fathoms. This bay forms a harbour wherein vessels would be sheltered from all winds.

18th.—I explored the land on the north side of the said bay, proceeding about 2 miles into the interior. The bank is cut and divided by small rocks, (which however do not extend far inland) as well as by small hills, succeeded by very fine vallies. The principal timber is cedar, spruce, alder, white birch, ash, &c. The soil consists of a layer of vegetable earth, about two inches deep, lying on a bed of the marl (Marne) marked No. 4. On the small hill the soil is sandy, and the timber red and yellow pine, (of considerable size, and apparently of good quality), spruce, sapin, white birch, &c. Two large rivulets running from the north, fall into the head of this bay, on the right bank of which (the bay) there are many limestone rocks of different shapes and sizes, and detached from each other. In the middle of the bay is a small rock which forms a small promontory, on the north side.

19th.—I explored the country on the west side of the said bay, north of the river Vasigamenké, and south of the first rivulet, on the north side thereof, to the distance of about four miles inland, at the end of which distance I crossed the country to the southward, as far as the said river Vasigamenké, (a distance of about 2 miles,) and then descended to the bay following the valley of the last named river.

This part of the territory is intersected by a small chain of rocks to the distance of about $\frac{1}{4}$ of a mile; the rock then disappears and the good land begins, being level for about two thirds of a mile, after which the surface is irregular, being frequently intersected by gullies of moderate depth, the greater part of which form the channel of small rivulets, running into the river Vasigamenké. In other places the land is intersected by vallies of considerable extent, in which there are found layers of vegetable mould, from 7 to 8 inches thick, lying on a bed of the clay, marked No. 11. The timber is *liane*, ash, cedar, spruce, black birch, alder, &c. On the banks and high grounds, there is a considerable quantity of good red pine, of middling size; the soil is almost entirely white and red sand, and whenever it happens that the tops of these ridges are of considerable extent, cedars of large growth are found in the centre of them, in great abundance, mixed with alders. The soil consists of a layer of black earth, resting on the clay marked No. 10. The river Vasigamenké is about four chains and a half in width, at a mean; it is very rapid, and runs over a bed of gravel. The quantity of water it brings down is considerable, and it has changed its bed in many places between its mouth, and a distance of about three miles up it. There are banks raised in the middle of it, which are from six to nine chains wide, and frequently a quarter of a mile long.

20th.—I explored the country between the river Vasigamenké and that of Wissuscoué, setting out from the bay aforesaid, and following the Vasigamenké. There is here a fine valley, extending about a mile in depth. The timber is *liane*, ash, cedar, spruce, sapin, alder, &c., and the soil a vegetable mould, from 11 to 12 inches in depth, resting on a bed of the clay marked No. 12. After this the land rises gradually, the timber being spruce, cedar, sapin, alder, &c., of a very small growth. The soil is a layer of vegetable mould, from 9 to 10 inches in thickness, resting on the clay marked No. 13. At two miles and a half there is a steep hill to be ascended, on which the timber is red and yellow pine of a considerable size; the soil is sandyish, and lies over a grey earth, of which No. 14 is a specimen. At three miles and a half we entered a fine valley, the timber in which is *liane*, cedar, sapin, spruce, alder, &c. The soil is a layer of black mould, three or four inches in thickness, resting on a fat clay. At five miles, is the beginning of a piece of spruce land, covered with timber of very small growth, mixed with alder. The soil, a layer of black mould, resting on one of white sandy earth. At six miles, mixed timber and the land very good;

being here I crossed the country to the southeast, in order to approach the river Wissuscoué, about two and a half miles, and then descended to the bay before mentioned, following the course of the last named river, and keeping a certain distance from it. I found here the same variety in the soil and timber which I found in going up near the other river. In the night between the 20th and 21st, being encamped at the mouth of the river Vasigamenké, I drew a Meridian line by observation on the Polar Star and the Great Bear, and found the variation of the magnetic needle of my Instrument (which was at Quebec, by observation in July last, $13^{\circ} 30'$) to be here $17\frac{1}{4}^{\circ}$ west, making the difference of variation at this place and at Quebec, $3\frac{3}{4}^{\circ}$.

21st.—I crossed over to the south side of the said Bay. In this part there is a small Islet, six chains in length, and three in depth, which is nothing else than a small rock, on which grows some cypress, lying about half a mile from the mainland, and dry at low water. The river Wissuscoué, which is about the same size as that of Vasigamenké, and runs from the south west, falls into this bay, at its most southern point. I ascended this river, following the south side, between four and five miles. The banks are rather high, but when these are once ascended, the land becomes generally level, and consists in great part of a bed of vegetable mould, lying on clay. The timber is for the most part *liane*, white birch, cedar, spruce, sapin and alder. There is a fine mill seat on this river, about two miles from its mouth. Returning to the bay, I determined its width, which I found to be $2\frac{1}{2}$ miles, on a line running magnetically north.

22d.—I explored the land on the south of the said bay. For about half a mile, the land is level, and the soil a bed of vegetable mould, from eight to nine inches in depth, resting on what I believe to be marl, and have marked No. 27. The principal timber is cedar, *liane* of considerable size, mixed with alder. The land there rises very gradually. At a mile and a half there is a considerable hill to be ascended, which is very steep. After this the land is intersected by deep gullies. The timber is spruce, sapin, yellow pine, white birch, cedar, &c., of considerable size, and the soil a layer of yellow clay, four or five inches in depth, resting on the red sand marked No. 21. The same sort of land extends nearly two and a half miles. After this is met a chain of high and barren rocks, over which I prolonged my journey, between four and five miles, hoping that the rocks would disappear. But on the contrary, they appear to rise constantly higher and higher. Returned to the shore of the bay, I went down it as far as the nearest cove to this place, on the east shore, visiting and examining in my course all the rocks on the said shore.

23d.—I ascended towards the south about three miles, and found nothing but barren rocks. After proceeding the three miles, I met a

chain of rocks, which is the continuation of that which runs along the shore of the river Saguenay: I then saw that to proceed farther would be to lose my time and trouble; and I therefore determined to turn back, and embarked for the purpose of proceeding more to the eastward, or towards the entrance of the bay aforesaid. About two miles to the eastward, I found a large rivulet running into the bay, where I went ashore and found a small valley, containing about 40 or 50 acres, after which the chain of rocks is again continued. Thence I descended as far as the cove, west of Pointe au Fort, where I encamped, and afterwards proceeded to explore the said Pointe au Fort. I found the land next the bank covered with small rocks, which rise in steps, afterwards the rise becomes more sudden. The timber is chiefly white birch, and the soil composed of red and white sand. This sort of land continues for about half a mile, when the chain of rocks is again met with. All along the south shore of the bay from Pointe au Fort as far as the river Vasigamenké, there are shoals, which, at low water are uncovered, and vary in width from five to fifteen acres. Upon these we found a great quantity of beach grass.

24th.—I explored the cove on the east of Pointe au Fort, which contains about 400 acres of land, which might be cultivated, and the soil of which is very tolerable; the chain of rocks bounds this piece of land in the rear. Opposite to this cove is a shoal which is dry for about two-thirds of a mile at low water. After this I ascended the river Saguenay, following the south shore, to about six miles above West Cape, where I found the land bearing some indications of fertility. Having disembarked, I explored this part of the country, going about three miles back from the river, and found the land tolerably level, and the soil tolerably good, although intersected near the bank of the river, by small rocks, which, however, do not extend far. The timber is white and black birch, sapin, cedar, spruce, &c.

25th.—I explored the flat point, where I found on the east side, eight or nine acres in width of land, covered with water, at the time of the spring tides, and very marshy. Behind these marshes, as well as on the other parts of the point, the land is covered with timber, consisting of red and white spruce, white birch, cedar, alder, &c. The soil is a layer of black mould, eight or nine inches deep, resting on a bed of sandy clay, marked No. 45. While exploring this point, I met the Ruisseau l'Islette, on the east side of which there is a small rock rising in the river Saguenay, and running inland towards the south, for about half a mile. It then disappears at the commencement of a valley, in which there is much coarse hay, with alder, cedar, *liane*, &c., the soil, a layer of black mould, four or five inches deep, resting on a bed of vegetable earth, of which No. 46 is a specimen. At two miles and a quarter the land begins to rise gradually: at two miles and a half, it again becomes level, and the timber is red pine, white birch, sapin,

spruce and cedar; the soil, a layer of yellow clay, resting on a bed of grey earth, both mixed with sand. The same sort of land continues for the distance of five miles, where it becomes intersected with small hollows.

26th and 27th.—I explored the land between the Mill River and the river Chicoutimi, ascending (at a certain distance from the first named river) to the distance of about ten miles. On leaving the river Saguenay the land rises gradually, for about a mile and a half. It then becomes level; at one and a half miles, the soil is a layer of vegetable mould from four to five inches deep, resting on the fat earth, marked No. 47. At four miles, it is a layer of black mould, on a bed of fat earth, marked No. 48. The timber varies into white birch, black birch, sapin, spruce, ash, cedar, alder, &c., there are also a few pines here and there. At five and a half miles, there are a few scattered small rocks, which continue to be seen to the distance of about seven miles from the starting point. They then disappear. The soil between these small rocks is a layer of vegetable mould, resting on the fat sandy earth, No. 49. At eight and a half miles, the soil is a layer of black mould, from seven to eight inches deep, resting on the fat earth marked No. 52; the wood is sapin, mixed, and the land and timber continues the same, to the distance of ten miles from the Saguenay, at which distance I began to cross the country towards the Chicoutimi, and being within a certain distance of it, I began to descend towards the Saguenay, and found the ground frequently crossed by deep hollows, but the soil constantly good, being generally a rich fat earth, slightly mixed with sand. The timber is various, and nearly the same as that near the Mill River.

28th.—I explored the Peninsula formed by the river Saguenay and Chicoutimi, to the distance of about three miles; and here I was not able to find any extent of country very fit for cultivation; except, that along the shore of the Saguenay, there are small vallies of very good land, and also small patches of the same kind on the Chicoutimi. But the interior is nothing but high rocks, and brown and red sand, very stony.

29th and 30th.—I explored the country to the north of the Saguenay and opposite to the post of Chicoutimi, to the distance of fourteen or fifteen miles inland.

This part of the country is bounded in front by the capes St. Francois and St. Charles, which stretch inland from the Saguenay, for about the third part of a mile. The soil then becomes very sandy, and of very middling quality; but about a mile further, the land is mostly flat, and the timber, aspen, *liane*, cedar, ash, some white birch, alder, &c., with these, there are service trees, (pinbinat) choke cherries and abundance of coarse hay, which in some places would even be worth mowing. The

same soil (which is a layer of black mould, resting on fat earth) extends to the distance of fifteen miles from the river, except that about the seventh mile, there are some rocks, extending about half a mile in depth, but which do not rise more than ten feet above the surface of the ground in their neighbourhood. Being at the distance of fifteen miles from the river, or thereabouts, I climbed the trunk of a tree, and as far as I could see the land appeared to be the same.

31st.—I remained at Chicoutimi to get some bread baked, and repair my canoe.

1st. September.—I set off to explore the River Des-Terres-Rompues, which runs into the outlet of lake St. John, about eight miles above the post of Chicoutimi, or two miles above the point where the river Saguenay loses its name, and takes that of "The outlet." It is also the highest point on the river, to which the tide reaches. The outlet is not more than 15 to 16 chains wide, and the water rushes down this narrow channel, with extraordinary rapidity. At this place the portage Picau-chasca, which is six miles long, and runs to the north and north-west, commences; along this portage, the wood is sapin, mixed with alder. The soil, a layer of vegetable mould, over fat earth and clay.

Having arrived at the end of this portage or at the River Des-Terres-Rompues, which is about six chains wide, I encamped, and sent my men to fetch the rest of the baggage.

2d.—I was detained by a heavy rain, which fell the whole day.

3rd.—I began to re-ascend the said river, which runs for the most part towards the north, the banks are low and the land very good on each side. At one mile is the second portage, where there is a small fall of about six feet high. The river is divided into three branches, by two small islands, and a little lower down is another. At this place the river is twelve chains wide. A quarter of a mile farther is the third portage, where there is a fall of about twenty feet high, and above which the river resumes its ordinary width. At a quarter of a mile beyond this last, is a small rivulet running from the west about 80 links wide. At three miles is the fourth portage, where there is a strong rapid.

One mile farther is the fifth portage, a small fall about five feet high. The river then approaches the north-east. At six miles the sixth portage at a small island, with two others on each side of it, and another a little lower down. The river continues to approach the north east. One mile and a quarter farther, the seventh portage; here there is a fall of twelve feet, the river is divided into two parts, by a small island. Below this fall, on the east side, is a deep cove, in which lie two small islands: here the banks of the river begin to rise.

I continued to ascend this river, to the distance of $2\frac{1}{2}$ miles above the seventh portage, and there I encamped.

4th.—I explored the country on each side the said river, beginning on the west side. The land rises gradually after leaving the river for the distance of half a mile. It then becomes level for about four miles, after this it again begins to rise gradually, and continues to do so to the distance of five miles from the starting point, where it becomes again level. The principal timber is white birch with some sapin. The soil is very sandy and of middling quality. I then explored the east side, where I found a great deal of grey pine, mixed with other kinds of soft wood. The land (after ascending the bank of the river) is level. The soil is sand, and offering no promise of great fertility. I continued my course eastward, from four to five miles, without finding any change either in the wood or in the soil.

5th.—I continued to ascend the said river, which begins to approach the north. At half a mile, the bank begin to be lower, and the land becomes very good on each side. At one mile and a half, a small island. At two miles, the beginning of strong rapids. One mile up these rapids is the twelfth portage, where there is a fall of twenty feet high, and at which the river is divided into six parts, by five small islands, and is about eighteen chains wide, immediately above the falls. After passing the portage the river winds very much, for the distance of three miles. at the end of which is the portage Hachoutasgané, leading to the Grey Pine River, and which is about four miles long. The soil along it is very sandy. At the beginning of this portage, there is a steep hill to be ascended, which runs towards the north-west. The triangle formed by the Saguenay, the river des Terres Rompues, and the St. Marguerite, appeared to me to be generally level, except near the St. Marguerite, where there are some mountains of middling height.

The Grey Pine River is a chain and a half wide, and in places very rapid; the banks are low, and the soil on each side sandy but very level.

6th.—I began to ascend the Grey Pine River, which appears to me to be nearly parallel to the River Des-Terres-Rompues.

At three miles and a quarter, there is a fine little cove on the left, and a few chains higher up, another on the right. One mile from this is the fourteenth portage, which is two miles long, and runs towards the north-east, leading to lake Patispicasmetché, which is altogether irregular, and round which are first seen small and very low rocks, extending but a small distance from the banks. Having passed these, the land becomes level and sandy. Having reached the sixteenth portage, I encamped.

7th.—I passed into two small lakes, and then into lake Wiscouamatche, which is about three miles long, and varies very much in width, on account of the bays on each side, which are more or less deep. In the first of these bays on the south side, there is a small island. The lake varies in depth, according to its width. On the north-east the mountains begin rising to a certain height, and having their summits nearly of a round figure. On the north-west and west, the land also rises more gradually, and without rocks. I passed by a small portage out of this lake into that of Mascouiané, which is a mile and a half wide, and about four long, and very deep, abounding with excellent fish. There are several islands in this lake, on the east side, on which side the mountains rise to an extraordinary height. I ascended these mountains, and thence saw the mountains which separate the waters of the Saguenay, from those of the St. Lawrence; on the west side as far as the eye could reach, there was no mountains to be seen. The land appears to rise gradually. The eastern point of the lake is in latitude $49^{\circ} 16' 3''$ north. From this lake I passed by a portage, leading to another small one; and from this last, by another portage to the river Kaoissa, which is a chain and a half wide, running from the east, and going afterwards towards the north. The water of this river, which is very rapid, runs into lake St. John; the river is bounded on each side, by high rocks. Here I began to return to Chicoutimi, and encamped at night on lake Mascouiané.

8th.—I continued descending, and reached the post of Chicoutimi, on the ninth, at half past seven in the evening:—my baggage being wet through by the heavy rains, which fell during my descent.

10th.—I passed the day at Chicoutimi, in order to get my baggage dried, and to get some information from Pierre Laloutre, an Indian, living in this part of the country. He told me that the river Kaoissa, takes its rise from lake Wiscouamatche, and that the waters of this lake run into lake St. John. That the river St. Marguerite is very rapid; but that the salmon go up it, to the distance of about twenty leagues, and that at this point, there are falls which prevent there penetrating farther.

That the sources of this river lie in a chain of high mountains, and very close to those of the river Des-Terres-Rompues.

That these mountains are full of lakes.

That on the south side of the St. Marguerite there was a small chain of mountains.

During my journey to the river Des-Terres-Rompues, a swelling appeared on the right hand of Jean Belan, one of my men, and upon his arrival at Chicoutimi, he was obliged to apply poltices to it, after which it

came to a head on the morning of the eleventh. It was there that Mr. Wagner, (whom I found at Chicoutimi, waiting for my return from the Terres Rompues, in order to accompany me during the rest of my expedition) told me, that it would be dangerous for this man to continue to perform the necessary work, and that if he did so, he might be in danger of losing his hand.

11th.—I went down the river to the place called Les-Prairies, accompanied by Mr. Wagner, and helped my other man, Gregoire Donneville, to paddle the canoe. Having reached Les-Prairies, I ascertained the extent of land occupied by them, which I found to be about fifteen or sixteen hundred acres. The soil, a layer of vegetable mould, from twelve to fifteen inches deep, resting on clay. There is very little timber, and at least 20,000 bundles of hay may be made every year in these meadows. On the north of the Prairies, is the prolongation of Cape St. Francois, extending to some depth, behind which rock the surface of the land varies greatly, being sometimes high and sometimes low. On the high grounds the soil is very dry and sandy; and in the small vallies it is a layer of black mould, resting on fat earth; and this same quality of soil appears to extend very far to the northward; but on the north-east, the mountains appear to be but at a little distance. After this exploration, we returned to Chicoutimi.

12th.—Joseph Belan was not in a state to assist the other men with the paddle, and my own hands were too much blistered with yesterday's work, for me to be able to handle the paddle to-day.

13th.—My hands were a little better, so that I continued to assist my other man, and we set off on our journey downwards, following the north bank of the Saguenay, and we reached that part of Pelletier's bay called le Portage; here the river is two miles wide, and here we encamped.

14th.—In the western part of this bay there are two small islands, and on the north-east side is the mouth of the river Pelletier, eighty links wide. I ascended by the portage before mentioned, as far as the lake Benoit, which is of considerable extent, and very irregular. It is surrounded by mountains, which, however, rise to no great height. From this lake, going upwards towards the Batard River, the country appears to be mountainous, though the mountains are separated by small vallies, the soil of which is susceptible of cultivation; these vallies are too small to be worth the attention of settlers. I then proceeded as far as East Cape, of which I took the latitude, and found it $48^{\circ} 21' 4''$ north. I took also various angles, in order that I might be able to make the map of the river Saguenay, as correct as possible. From this place I proceeded to the river called Belle Fleur, which falls into the Saguenay, on the south side, and is one chain wide. At its mouth is a small valley, of very good cultivable ground, containing fifteen or

sixteen acres—behind this are the rocks which rise in steps. Here I encamped,

15th.—I continued to descend the Saguenay, keeping along the south shore. The rocks along this shore rise continually higher and higher, and become also more barren. About six miles below the river Belle Fleur, there is a fine bay called "The Anchoring ground," affording shelter from the west and south-west winds. The depth of water varies from twenty-five to forty fathoms; the bottom seems to be sand. Opposite the bay is a small valley of cultivable ground, lying between two high rocks. From this place I proceeded to Trinity Bay, which extends a mile and a half inland, being about a mile wide at its mouth, and one quarter at its head. It is bounded on the west side by very high rocks; on the east side, the rocks are not so high. This bay is a safe harbour in all winds, and the anchorage is very good; the depth of water varies from ten to thirty fathoms. A small rivalet about two chains wide falls into the head of this bay; it winds along a valley, which extends to the south-west.

16th.—I descended to St. John's Bay, six miles from point to point. Entering this bay I determined its extent. It is near 2 miles wide at its mouth. In the western part there is a small island; it extends two miles inland. Its width at the head is very little less than a mile. In the western part of the head of this bay, the anchorage is very good, and it affords good shelter from the westerly winds, there are also several batteries, on which six or seven hundred bundles of hay might be cut. A river which is from two to three chains wide falls into the east side of this bay: this river is very rapid, and runs in a rocky channel, winding through a valley of about a mile wide, lying between two rocky banks, which are nearly parallel to each other. The soil in this valley is very good. After having examined this bay and determined its extent, I began to ascend the river. The men were obliged to walk in the water, in order to force the canoe along. Mr. Wagner and myself went up on foot close to the banks of the river, and continued for the distance of about three miles, when we encamped.

17th.—Seeing that it would be very difficult to get the canoe up this river, on account of its rapidity—and observing that its general course was south-west, which would carry us far away from the mouth of the Malbaie river, I determined to return and descend by the Saguenay. In this bay, and along the banks of the small river just mentioned, there may be a sufficient quantity of good land for about fifty settlers. Having arrived at the mouth of this river, I continued to descend the Saguenay, and there arose a strong west wind, which detained us in the eastern part of St. John's Bay, till half past three, P. M. We then proceeded as far as the Little Saguenay, where we encamped. This harbour is well sheltered from all winds, but the anchorage is very danger-

ous, on account of the large stones which are scattered here and there. In the western part of the bay, are two small islands; and a small river which runs between two high rocks, falls into the bottom of the bay.

18th.—We started at six in the morning, and reached Tadousac at two P. M., where we remained till the following morning, to pay the boat, which Mr. Moreau, the clerk of the post of Tadousac procured for our voyage as far as Malbaie.

Latitude of Tadousac, $48^{\circ} 7' 56''$.

19th.—We started in the afternoon, and went as far as the Baie-au-foin, where we encamped, for the purpose of examining Pointe aux Bouleaux and Pointe aux Alouettes, the soil on both of which is very good, and the superficial extent about three thousand acres.

20th.—We set off at nine, P. M. and went as far as Port-au-Persil, when we arrived at ten, P. M. and there we lodged.

21st.—The west wind blew so hard, that we were compelled to remain here all day.

22nd.—It continued to blow so hard, that we decided on crossing from this place to Malbaie, by land, along a small path (which is but very little used) across the mountains: and for this purpose, we took each man his baggage on his shoulders, and in this manner proceeded as far as the first house of Cape à l'Aigle: here we engaged a carriage to convey us to the house of Michel Chaperon, at Malbaie, where we took up our quarters.

22rd.—We engaged a boatman named Thomas Simard, to carry us to Quebec, and set off immediately. At seven, P. M., we were off the Isle aux Coudres, and went ashore there, while the tide was running out. We started again at eleven P. M., and at two in the morning were forced by the west wind, to enter a small river, by which we were prevented from proceeding further. Here we were detained the whole day.

25th.—We started at two, A. M., and reached Quebec at eight o'clock in the evening of the same day.

26th.—I made the report of my department, at Mr. Lampson's Office, and proceeded to my residence at St. Mary's, Nouvelle Beauce.

J. P. PROULX, S. S.

MINUTES OF EVIDENCE

&c. &c. &c.

HOUSE OF ASSEMBLY,

Monday, 19th Jany. 1828.

RESOLVED, That the Report of the Commissioners appointed in pursuance of an Act of the sixth year of His Majesty's Reign, intituled, "An Act to appropriate a certain Sum of Money there-
" in mentioned, for exploring the tract of country to the north
" of the River and Gulph of St. Lawrence, commonly called the
" King's Posts, and the Lands adjacent thereto," be referred to a Committee of Five Members, to examine the same and report thereon with all convenient speed with power to send for persons, papers and records.

Ordered, That Mr. *Stuart*, Mr. *Laterrière* Mr. *Bourdages*, Mr. *Neilson*, and Mr. *L. Lagueux*, do compose the said Committee.

Attest.

W. B. LINDSAY,
Depy. Clk. Ho. of Afs'y.

HOUSE OF ASSEMBLY,

COMMITTEE ROOM,

Thursday, 29th Jany. 1828.

In Committee on the above Order of Reference.

PRESENT : Messrs. *Laterrière*, *Stuart* and *Bourdages*.

Mr. *Stuart* called to the Chair.

Read the Order of Reference.

Read the Report referred, and examined the Journals, Plans, and other Documents accompanying the same.

Mr. *Charles Herménégilde Gauvreau*, of Mal-Bay, Notary Public, called in, and examined :

Q. Have you any knowledge of the Country about the River Saguenay, the River Saguenay itself and the country lying between the River Saguenay and the St. Lawrence ?

A. I have visited the Saguenay the year before last, and now hand in to the Committee a true Copy of the Journal kept by me on my journey ; the fame is as follows :—

From Tadoufsac to La Boule,—distance about 2 leagues,—the land high, rocky, barren, and the banks nearly perpendicular.

A good harbour sheltered from the north-west, on the NE. side of the Saguenay ; and a good harbour for boats on the SW. side, at the place called “*Ance a la Barque.*”

At a distance of 3 leagues or thereabouts from Tadoufsac, at the place called “*Pafse Pierre,*” a good harbor for schooners sheltered from the NW. and SW., and a good fishing station. There are also nearly opposite to this last place to the SW. some small islands.

From La Boule on the NE. to St. Stephen's Cove on the SW. a distance of about 2 leagues, a good harbour, sheltered from the NW.; and opposite to the Cove lies “*Big Rock Cove*”—a good harbor for vessels, &c.

On the same side lies “*Ottapemiuche*” Cove, a good harbor for boats ; and at a small distance “*Hay Cove,*” a good harbor for boats.

Opposite “*Hay Cove*” on the SW. is the River St. Margaret, about 6 leagues from Tadoufsac ; safe harbor against all winds : cultivable land towards the NE. and NW., but offering the greater advantages towards the NE. ; navigable for canoes about 20 leagues ; there are 3 or 4 portages of little consequence. It is even possible to reach Portneuf on the River St. Lawrence by this route.

A short distance from the River St. Margaret is St. Louis' Island, about 7 leagues from Tadoufsac—good harbors at each end. This island may be about one league long, and its width about a quarter of a league. There is nothing further remarkable about

it. One league higher on the NE. is the Little Saguenay—a fishing station and a good harbor—at the distance of half a league on the SW. is “Cocquert,” (so called in honor of the Missionary whose tombstone, &c. are still in the church at Chicoutimi,) or Bartholomew Island—a good harbor.

Opposite on the NW. is the Point called “Des Ecureuils”—a landing place for canoes.

A little higher up on the SW. is St. John's Cove, which may be about a league and a quarter in depth, having a small island at its entrance; a fishing station. Vessels lying here are sheltered from all winds. About 16 or 18 miles in the interior there are considerable tracts of maple land, and the land appears very fit for cultivation and sufficiently level.

On the same side, at a distance of 2 leagues from St. John's Cove, is the “Trinity,” an excellent harbor. The cliffs are apparently between fifteen and sixteen hundred feet high, and more than perpendicular, for they hang over the surface of the water.

A little higher up lies the Cove du ——— about which there is nothing remarkable except that it is a very good harbour. Opposite the “Trinity” on the SW. is “Paddle Cove,” a good harbour. A league higher up on the same side is “Little Paddle Cove,” at a distance of about a league from the first; a good harbour for canoes.

At a distance of half a league higher upon the same side is “French Point,” a good harbour for boats, &c. sheltered from the NW.

Three quarters of a league or one league higher up on the same side, is the “Descente des Femmes;” a good harbor for vessels, &c.

Two leagues above the “Descente des Femmes” on the same side, is “East Cape,” and about a league higher up “Peltier's Cove,” good harbor for vessels—the land in part cultivable.

One league and a-half higher up “The Great Point,” a good harbor.

A league and a half higher up on the same side, “Rocky Point,” a good harbor for canoes.

Half a league higher up on the same side are the "Prairies," consisting of cultivable land, abounding in hay—a good harbor at high water.

Half a league higher up on the same side is "Otter River," and half a league higher up, the "River ———;" (the name of this river has been forgotten, or perhaps none has ever been given to it;) up which vessels may proceed about 20 or 25 arpents.

Half a league higher up, "Caribou River," a good harbor.

Half a league higher up, "Cape St. Francois", a good harbor.

Three quarters of a league higher, "Cape St. Joseph", and at about the same distance the Rapids—land cultivable, and good harbors.

N.B. From opposite the "Trinity" in ascending the River as far as the Rapids and higher the land appears sufficiently level.

Going down the Rapids between and opposite Cape St. Joseph and St. François, on the SW. side is the River Chicoutimi; near which are erected on a point of land on the NW. of the said River, a large house, inhabited by the Clerk of this Post, a store, bakehouse, barn, stables and other buildings; and 7 or 8 arpents higher up on the banks of the said River, are a chapel and burial ground.

The direction of this River is nearly north-west as far upwards as Lake St. John. There are eleven Portages, the most considerable of which is about $\frac{3}{4}$ of a league or a league, beginning immediately at the Post House at Chicoutimi. The views round Chicoutimi are sufficiently pleasing. The lands from Chicoutimi to Lake St. John, and even farther, are cultivable according to the information given by the Clerks of the Posts and other old voyageurs. The length of Lake St. John is about 12 or 13 leagues, and its width nearly the same; there are in this Lake several small islands. Starting from the mouth of this River, at the distance of a quarter of a league down the Saguenay, is the "Musk Rat River," a good harbor for vessels, &c. Half a league lower down is the "Mill River," a good harbor. The land susceptible of cultivation as far down as Ha! Ha! Bay, as well on the banks of the River as at a great distance inland. From this Bay for a distance of 4 leagues down the River towards "Eagle Cape,"

there are good harbors. The point of this Cape runs in a direction nearly NE. Ha! Ha! Bay may run about 4 or 5 leagues inland from its entrance, and may be about a league wide. At the head of the Bay is a small river. The cultivable land running to the north-west as far as Lake St. John, a distance of about 25 or 30 leagues—a good fishing station and a good harbor. On the top of the banks the land is level and well timbered, and the soil strong and good nearly as far as the eye can reach. Four leagues below this are the "Pictures," so called because the surface of the rocks are smooth, and at a distance have the appearance of pictures. From this place to St. John's Cove are several small harbors—there is only one which is a very good one; but nothing otherwise remarkable.

The part of the River lying between St. John and Tadoussac has been already spoken of in the account of the ascent of the Saguenay.

The undersigned penetrated into the interior of the country on both sides of the Saguenay; in one instance above the River St. Margaret, as far as Chicoutimi, a distance of about 20 or 25 miles, and his opinion is, that there are the means of forming considerable settlements with little trouble, the land being generally good and capable of becoming fertile,

The whole nevertheless humbly submitted to the readers of these remarks by him, who has the honour to subscribe himself,

Their very humble and
very obedient Servant,

CHARLES H. GAUVREAU, N. P.

Malbaie, 23d Sept. 1828.

(No. 2.)

Mr. Edward Bowen, of Quebec, Student at Law, having been called in, stated:—

I was of the party which explored the Saguenay and Lake St. John last summer, and returned by St. Paul's Bay in company

with Mr. Baddeley, of the Royal Engineers. Our information respecting the nature of the country and quality of the soil between the old settlements upon the St. Lawrence and the Chicoutimi on the other, is necessarily very small, and is to be found in Mr. Baddeley's report to the three branches of the Legislature, accompanying the report of the Commissioners for exploring the Saguenay. The persons who could give the Committee the best information upon this point are a few men residing in the neighbourhood of St. Paul's Bay, who have been in the habit of going out with the indians to assist them in carrying out the provisions necessary for their support during the hunting season, and returning at the end of that period for the peltry. In order to prevent mistakes the best plan would be, to procure their names from Vincent Tremblay, an old and respectable inhabitant of the village of St. Urbain, in the rear of St. Paul's Bay. I would particularly recommend the examination of the man who acted as our guide from St. Urbain to the Pafs des Monts, who was procured for us by Mr. Vincent Tremblay; he has been employed as a carrier by the indians for some years, and has traversed the country in the rear of St. Paul's Bay, in all directions, as far as the sources of the Jacques Cartier.

(No. 3.)

Mr. *Thomas McNicol*, of Quebec, was examined as follows :

I am a native of Malbay, and my family have always resided there. I have resided for some time at Quebec, but have now fixed my residence at Malbay.

Q. Have you ever visited the country lying between Malbay and the Saguenay ?

A. I have never gone quite to the Saguenay ; I have been as far as the Petit Saguenay, distant from the Saguenay itself about eight miles ; I cannot speak with any certainty as to the exact distance.

Q. When did you visit this country ; what number of days were you employed in the excursion ; how did you provide yourself in provisions ; what number of men did you take with you ; how many miles did you march per day ; what was the whole distance you went ; what were the streams and mountains you met with ; what was the extent of level ground you passed ; how is this

country generally timbered ; is it susceptible or not of cultivation ; is there any and what number of inhabitants at Malbay who would be desirous of settling ; what was the depth of snow compared with the depth of snow at Malbay.

A. In the month of December last ; I was about ten days absent ; I took my provisions of pork and flour from Malbay ; there were ten indians, Mr. Brownson and myself on the party ; not more than three or four miles a day going, but on returning five or six miles. The distance may be eight or nine leagues. There are a good many mountains in this tract of country, but it is generally level. The height of ground in the rear of Malbay, taking your departure from the River Malbay, is about four leagues from the River St. Lawrence. At this point you reach a valley of gentle declivity intersected by many small streams having many lakes ; which valley varies from a league to a quarter of a league in breadth, and extends as far as the Saguenay. The timber is rather small ; there are a good many burns, and the timber looks like young timber : it consists of some birch, but principally of pine, spruce and the balsam tree. Having visited the country in the winter only, it is difficult for me to speak with any certainty as to its susceptibility of culture or not. If the lands on the Saguenay were granted, settlers, I dare say, would be found at Malbay, and on the north shore generally. The snow was of the same depth as at Malbay, and the climate appeared to be the same.

Q. Could you give the names of any farmers or hunters of the north shore who would be able to give the Committee any information respecting the country lying between the Saint Lawrence and the Saguenay generally ?

A. Thomas Simard, now of Malbay, who has passed the best part of his life at the King's Posts.

(No. 4.)

Lieut. *F. H. Baddeley*, Royal Engineers, having been called in, stated as follows :

In my geognostical report on the Saguenay country will be found all the information I have to offer on the subject of the nature and quality of the lands in rear of St. Paul's Bay, which,

with the exception of the settled portions of that part of the country, is merely confined to hearsay evidence, and is as follows :

That after passing the chain of mountains which runs at the back of St. Paul's Bay, at the distance of from fifteen to twenty miles, a fine level tract of cultivable land is met with, which it takes two days to traverse. Through the centre of this tract the Malbay River takes its course. Similar information was received of the country on reaching Murray Bay.

From Mr. Vincent Tremblay, of the Parish of St. Antoine, information will be obtained of the names of the persons best qualified to give information.

(No. 5.)

Mr. *Thomas Simard*, called in and examined :

He states, I am a native of Malbay. I have passed the last 13 years in the northern Posts. I have been well acquainted with that part lying between Malbay and the Saguenay. During the last 3 or 4 years I have been there often. I hunt martins, and fish for trout at this place. The land is mountainous for about 3 leagues from the River St. Lawrence ; it then becomes more level and intersected by hollows, particularly as far as the little Saguenay River, which is at a distance of 8 or 9 leagues from Malbay and one league from the Saguenay. There is a tract of cultivable land, the soil of which is yellow clay, sufficient for a settlement of about 100 families ; the land is there very good ; the timber is black and white birch, maple, sapin, spruce, mixed with other kinds. I know many farmers who wish to settle on new lands, but they would prefer beginning on St. John's Bay, and on the western part of the Saguenay above Chicoutimi. The climate is better than that of Malbay. The spring is earlier, and the land is much better.

(No. 6.)

Marc Pascal de Salles Latrriere, Esquire, a Member of your Committee, laid before the Committee an Extract of a Journal kept by him, on a visit to the Saguenay and its environs, in 1827. The same is as follows :

“ White Birch Point (“ La Pointe-aux-Bouleaux ”) which lies on the S. west side of the Saguenay, forms an irregular square of about $\frac{3}{4}$ of

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league in front by the depth of about one league, at the end of which depth it is bounded by mountains of the most desolate barrenness. The little Duck River which rises in the neighbouring mountains, bounds it on another side. The interior of this Point is marshy, and the timber which covers it, is, with the exception of the borders, nothing but small grey spruce. From the seignory of Mount Murray as far as this Point, (that is to say, from the Black River) the banks of the river, and the interior, as far as the eye can reach, offer nothing but rocky mountains, without any vegetation whatever. Leaving this place, I passed Tadousac, and proceeded as far as the "Bergerones." I ascended one of the rivers which bears this name, for the distance of a league and a half, and found nothing worthy of remark, except some prairies, which might perhaps produce altogether, from 7 to 8 thousand bundles of hay. The cultivable land on the banks of this river may extend from 4 to 10 arpents from the water, and is bounded by rocky mountains, whose only ornament is moss, and a few tufts of juniper. I explored the banks and the interior from the Point "Des Grandes Bergeronnes," as far as that of "Bon Désir," 3 leagues below it. The bank, which is at most 100 feet high, on account of its gradual ascent offers a rich vegetable border, and might induce a superficial observer to form a favorable opinion, of the whole tract lying between the river and the mountains, which bound it in the rear at the distance of 4 or 5 leagues. But I have passed this border; and after having proceeded 10 or 12 arpents into the interior, found myself in the middle of an immense swamp, covered with moss to the depth of three feet, and bordered on its edges by small black spruce. The information I received respecting the rest of this land on this side, as far as Port-Neuf, agree with this description of the "Bergeronnes." I returned to Tadousac, which is the principal depot of the Northern Posts. There is nothing here which could attract the eye of an agriculturist. In ascending the Saguenay as far as Chicoutimi, I made the following remarks: The general course in ascending the Saguenay is west: in some of its windings north-west. The first remarkable point on entering the river is a large mountain called "La Boule," (The Ball) on account of its shape, the gigantic base of which straitens the river at this place. The banks, which are from 15 to 18 hundred feet high, equally abrupt, and of primitive granite, enclose this twin brother of the St. Lawrence, whose mean breadth is not less than a league. The tide rises here 18 feet perpendicular: the lowest waters never leave dry the foot of those ramparts, built by the eternal architect, where the depth is so great that there is no anchorage. On the south-west side is St. Stephen's cove, which appeared to me about half a league wide from one point to the other: This cove is three leagues from Tadousac. The lessee of the posts has established a salmon fishery here. About 20 families might find means of subsistence in the neighbourhood of the cove. The sun-shine glistens on the surface of the rocks which surround it. For three leagues higher up the same abrupt banks continue; at this distance we entered a small bay, formed by the river St. Marguerite. This river is deeply buried in the mountains:

It is 2 arpents wide at its mouth: it is navigable for bark canoes for a great distance; but I am informed that the land on its banks is not cultivable, being too closely enveloped by abrupt mountains. There is but a small space of cultivable land on the north side of the bay, part of which crumbles down upon the beach, and forms long battures of sand, on which the fishermen stretch their salmon nets. On the south-west of the Saguenay, half a league above St. Marguerite's River is St. Lewis Island, a large mountain of an oblong shape, on which there is no other vegetation than a few shrubs growing in the crevices, and a little moss. It may be about half a league in length. I was told that this was the first anchoring ground above Tadousac; half a league to the north-west lies another rock, of an oval shape, surrounded by the waters of the Saguenay, and on which there is not a single tree. Three leagues from the river St. Marguerite, and consequently nine from Tadousac, is St. John's Bay, on the south-west, which may be about a league and a half wide at its entrance. The land here appears susceptible of some cultivation: the environs of this bay produce hay. There may, on its banks, be about a league in depth of cultivable land, (the slope of which is sufficiently gradual) lying between the bay and the highest part of the mountains. The soil consists in great part of blue and grey marl: a league higher up, is the cape called "the Trinity," on account of three small hollows. It is at least 18 hundred feet in height. Its summit juts considerably over its base. I doubt whether any traveller has passed under its dome, without feeling the littleness of man in comparison with these masses, the equilibrium of which is maintained by a power which forcibly awakens the idea of a Divinity!. Between this cape and another on the south side, is a pretty little bay; into which runs a river, one arpent in width, where the proprietor of the posts has established a fishery, but where the lands have not sufficient depth to induce the agriculturist to settle. From Trinity Cape to Ha-Ha Bay, the banks preserve nearly the same altitude and the same barren aspect. The country near this bay, (which is 19 leagues from the mouth of the Saguenay,) begins at least to be more level, and offers an uninterrupted tract of land susceptible of cultivation, and capable of supporting a numerous population. The highest land in the neighbourhood of this bay is not more than 150 feet above the river, and the slope is almost imperceptible. The soil is blue and grey marl. The timber is maple, black birch, ash, elm, poplar, pine, spruce, &c. The outlines of this bay form a basin, two leagues in width, and bordered by prairies of considerable extent. The river which runs into it is navigable for canoes for a great distance. The country in the neighbourhood of this bay is all composed of cultivable land, particularly towards Chicoutimi, which is separated from this bay, only by a tongue of land 5 leagues in width. At this place the Saguenay makes a bend to the north, and resumes its ordinary course after passing the point which shuts in the entrance of Ha-Ha Bay on the west. The traveller who is unacquainted with this bend, enters this bay, while he thinks he is proceeding up the river, and it is from the expression of surprise Ha-Ha, called forth

by this change of course, that the name of Ha-Ha Bay is derived. As soon as the point is doubled, you are only 7 leagues from Chicoutimi, which is the second post kept up by the lessee of the Crown, and where the Reverend Father, the Jesuit Labrosse built a chapel in 1727, which is still in good order. The north shore of the Saguenay, from "East Cape," presents nothing but a barren and rocky country. The land becomes level, and of the best quality, from "Rocky point," three leagues below Chicoutimi, as far as the Point of Broken Lands, about two leagues higher up. The lands in the rear are level, for the distance of 6 leagues. From the point "Des-Terres-Rompues," as far as lake St. John, a distance of 25 leagues, I am told the land is level, and of the best quality. From Rocky Point, as far as the Pointe "Des-Terres-Rompues:" there are five leagues of beach between this place, bordered by considerable prairies, where the inhabitants of Chicoutimi cut their hay. The Caribou River empties itself here: it is one league below Chicoutimi. It is one arpent wide, and preserves this width for a quarter of a mile up. There is also the River à Valin, half a league below the Caribou River. There are falls half a league from its mouth which would facilitate the erection of mills—Speaking of mills tall the old timber on this bank was destroyed by fire, 50 years ago: the new vegetable colony has not yet attained its growth. In the said distance of 5 leagues, there is also the "River aux Outardes," the banks of which are prairies to the depth of 15 arpents. The whole of the south shore in descending from Chicoutimi, 5 leagues to the great "Burnt Point," presents a tract of good and level land. In this distance there are three pretty little rivers. The river de l'Islette, the Mill River and the Musk-Rat River, and lastly the river Chicoutimi, which is one arpent wide, and by which the canoes belonging to the post ascend to lake St. John. I do not know what the number of Indians was in the time of the Jesuits, but is now very trifling. There are not more than ten families on what is considered as the Chicoutimi Territory; the same number on lake St. John, and its neighbourhood, and about 15 on lake Chamachouan, which is 50 leagues to the westward of lake St. John, and which is the last post depending on the Saguenay. This Mission undertaken by the Jesuits, could have had no other object than the propagation of the Christian faith among the Indians, for if it had been part of the plan of the French Government to form a settlement here, we should find other traces than the ruins of a house, and an old chapel which has since been kept up by the Indians. In order to reach the post of Chicoutimi, 27 leagues of difficult navigation must be accomplished, the only advantage possessed by this post, appeared to me to be its situation at the junction of the two rivers. Ha-Ha Bay appeared to me the natural port for vessels arriving from beyond sea, and I am of opinion that it will hereafter become the great mart on this river. The Saguenay is frozen in winter, from Chicoutimi as far as the St. Louis Islands. The most common wind here is the north-west; which sometimes blows with frightful violence; it is the best wind for coming down the river. To ascend it, a north-east wind is

wanted. It is said that other winds are imperceptible here. The land is fit for tilling at Chicoutimi in the month of May. The fall frosts are felt here earlier than at Quebec. I have eaten strawberries there on the 17th of June. I thought the vegetation more forward than at Les Eboulemens. Vegetables of all kinds flourish here. The greatest obstacle to the settlement of this place is the separation of the social tie ; for as soon as the navigation is closed, there is no further communication with the remainder of the world. The distance from Chicoutimi to Malbaie is reckoned at 4 days journey in winter, which is equal to 25 to 30 leagues. The immediate settlement of the Saguenay can be undertaken only by a Government or by individuals of colossal fortunes ; without considerable advances, such persons, as those by whom new settlements are generally formed, could not plant themselves here, notwithstanding the advantages which the territory offers."

(No. 7.)

Nicolas Vincent, (Tsawahouhi) Head Chief of the Christian Indians, settled at Lorette, being called in, stated :

The hunting grounds of my ancestors are in the forks of of the River St. Anne.

I have ascended the south-west branches of St. Anne and Jacques Cartier, to their sources.

I never ascended the Batiscan to its source, I passed from the S. W. branch of the St. Anne, to the N. E. branch of the Batiscan, and came out at the St. Lawrence.

I never was in the St. Maurice nor the River Champlain.

I know a part of the River Montmorency.

I never ascended higher the forks of the river, further than at a distance of about 10 leagues.

I have hunted beyond Lac des Neiges, sources of the Montmorency.

I have ascended the river Malbaie, about 10 leagues opposite the Rivière des Neiges.

The distance from the source of Jacques Cartier to Roche Platte, is about 10 leagues, and this last place is about 2 leagues from Valcartier.

The distance of the sources of the St. Anne, from the St. Lawrence must be at least 15 leagues; its course, for about 8 leagues from the St. Lawrence, is about N. E. and S. W.: opposite the great bay in Deschambault it is not more than 4 leagues distant from the St. Lawrence, here it runs a distance of 3 leagues between N. and S. W. to the forks, thence from $2\frac{1}{2}$ leagues to 3 leagues more to the S. W. to the forks, thence almost due north to the first lake, a distance of 2 leagues, thence through the lakes to its source, about 4 leagues N. W.

Into the last lakes which I saw, enters a river which runs from between N. and N. W., I have never been to the source of this river, but I have gone round it.

There are several falls in the St. Anne, I cannot tell the number of them.

The country is very mountainous.

I think there is cultivable ground from the St. Ann's, for a distance of about 10 leagues.

The timber is not very good, except some points along the river where there are some elms.

I should think the land were susceptible of cultivation, (not in a straight line, but following the sinuosities of the river) for about 7 or 8 leagues.

Above the Roche Platte, on the Jacques Cartier, to the forks of the river, a distance of 6 or 7 leagues, there are several rapids, which cannot be descended in a canoe, there are two falls of about 30 or 40 feet height; above the forks there are many falls, I cannot state the number, because we cannot descend the river there.

The wood above the forks is small epinette, bouleau, aunnages; there is even no pine; on this side of the fourche there are from four to twelve arpents of well timbered lands, along the banks of the Jacque Cartier. Beyond this strip of land are rocky mountains.

I cannot state exactly the distance I descended the Batiscan; there must be at least twenty leagues, but put down 15.

The good lands upon the Batiscan, extends farther than any of the other two rivers; they must extend at least ten leagues, in a straight line from the St. Lawrence. When I spoke of the good lands of the St. Ann's, extending 10 leagues, I meant 10 leagues, according to the course of the river.

I have hunted a little on the south side of the St. Lawrence. I have

been at the source of the Becancour or Black Lake. I have also passed round the extremities of River Duchêne. I have crossed 3 of the streams which enter into that river, and form its main stream.

It was in the spring of the year that I went to London, (1824.) I went from our village to Pointe Levy, and from thence upon my hunting expedition to the Black Lake. I passed through St. Giles, about the middle of the parish, I passed over the 1st of the streams, which empties into the Becancour, it is 5 or 6 feet wide here, afterwards becomes as wide as this room, and afterwards as wide as this house. I followed this little stream to the forks, a distance of about 2 leagues, the time seems long, there are so many turnings in the river. I ascended here the south eastern branch, a distance of $2\frac{1}{2}$ leagues to its sources, consisting of springs, not of a lake; here I crossed over a distance of about a league, and came to another branch of the Becancour, I ascended this branch about 2 or 3 leagues; the distance from this, which is the greatest source of the Black Lake, is about 4 leagues.

I have hunted also at Chateauguay; I have hunted also behind the settlements of Kamouraska and in that direction.

It would take me several days to make plans of this river.

Upon being asked what he thinks to be a reasonable compensation for his trouble, he said he could not say, he would leave that entirely to the Committee.

The hunting grounds of Paul's ancestors, are at Lake St. Vincent; of André Romain, on the river St. Ann; Kaska's ancestors are also on the river St. Ann; but below Paul, the ancestors of Louis, at Tantary, between the river Jaques Cartier and St. Ann; Seewée's at Lake Caché, between the Montmorency and Jacques Cartier River; Zacharié's ancestors lake St. Joseph. There were families occupying the hunting grounds, between the St. Ann and St. Maurice, but they are now all extinct.

Thursday, 12th February 1829.

PRESENT :—Messrs. Stuart, Laterriere and Neilson.

Mr. Stuart in the Chair.

Your Committee have examined the Report of the Commissioners appointed under the Act of the sixth year of His present Majesty's reign, intituled, "An Act to appropriate a certain sum of money for exploring the tract of country to the north of the river and gulph of St. Lawrence, commonly called the King's Posts, and the land ad-

“ jacent thereto ;” also the journals, plans and other documents which accompany the said Report, and the information given to them by several persons whom they have called before Your Committee, and whose examination they have the honor to report herewith.

It appears from these that the River Saguenay is navigable for vessels of any size, for a distance of about twenty-two or twenty-three leagues to Ha-Ha Bay, which is a good harbour, and that from thence for a distance of five or six leagues to Chicoutimi, this river is navigable at high water for vessels of large dimensions. Between the harbour of Tadousac and that of Chicoutimi, several harbours are found.

From Chicoutimi to Lake St. John the distance by admeasurement, is sixty-seven miles, sixty-eight chains.

The waters on the western side of the Peninsula, lying between Lake Tsinogomi and the grand outlet of Lake St. John, are generally navigable for batteaux, and all might be rendered so.

The following are the carrying places and distances on the route :

Names of Portage.	Length of Portage.		Water communication.	
	Chains.	Links.	Chains.	Links.
Chicoutimi - - - -	160	00	32	00
Maie - - - -	10	00	62	00
Attim - - - -	9	00	33	00
Washkou - - - -	7	00	619	00
Melon - - - -	13	00	99	00
Ministuké - - - -	33	00	148	00
Assini - - - -	20	00	1863	00
Weque - - - -	96	00	476	00
Pashicounanish - - - -	25	40	459	00
Melow-zebé - - - -	18	00		
From Belle Rivière portage to the entrance of Lake St. John - - - -			364	00
From Koushpigan to the post - - - -			821	60
Distance of Land Carriage - - - -			331	40
Ditto Water - - - -			5036	60
			5428	00

67 Miles, 68 Chains, 00 Links.

The grand outlet of Lake St. John, on the eastern side of the Peninsula, is a rapid stream navigable only for canoes, and even in these dangerous to all but the most experienced canoemen.

Upon the north eastern shore of the Saguenay, there seems to be but little land susceptible of culture, till within a short distance from Chicoutimi.

What extent of ground, susceptible of culture, there may be between the old settlements in the rear of Murray Bay, and St. Paul's Bay upon the St. Lawrence on the one side, and Ha-Ha Bay and the Saguenay and Tadousac on the other, does not appear.

Between Chicoutimi and the country immediately in its rear on the one side, and Ha-Ha Bay and the waters emptying into it on the other, it appears there is found 300,000 acres of cultivable land.

Proceeding from Chicoutimi to Lake St. John, by the western route, it seems probable that the country is not susceptible of culture to the westward of the river Chicoutimi, as far as the lower extremity of Lake Tsinogomi. From Lake Tsinogomi to Lake St. John, there is, according to the report of traders and indians, a deep tract of level and fertile country.

Your Committee however cannot speak with certainty upon this part of the country, as the Surveyor charged with exploring it, was prevented by accidental circumstances from accomplishing the object.

The Peninsula lying between Tsinogomi and the grand outlet of Lake St. John, is said to contain two hundred and fifty thousand acres of level and fertile land.

On the south-west side of Lake St. John, the mountains approach near to the Lake, and beyond them the whole country lying to the westward, until the river St. Maurice is reached, is altogether unsusceptible of culture, with the exception of a few patches too inconsiderable to be particularised.

The north eastermost side of Lake St. John, contains much good land. The following is a Table of the distances to which the rivers on this side of the Lake were ascended.

	Chains.	Links.	Miles	Chains.
River Peribonea,	1700	00	21	20
Musk-rat River,	170	00	2	10
River David,	769	00	8	49

	Chains.	Links.	Miles.	Chains.
Rum River,	123	00	1	43
River Mistassini;	720	00	9	00
Koucciatien River,	40	00	0	40
River Baddeley,	560	00	7	00
River Pastagoutin,	480	00	6	00
Saguenay from Chicoutimi to Terres } Rompues,	484	00	6	4

This tract probably extends with some interruption, as far down as the meadow lands nearly opposite to Chicoutimi—the country was here penetrated from the north of the river des Terres Rompues, for a distance of about sixteen leagues, and the land found to be of superior quality, the gentlemen charged with this portion of the exploring survey reports that the cultivable soil probably extends much further.

The following is a table of latitudes as taken by Lieutenant Baddeley of the Royal Engineers, with an artificial horizon :

Rivière La Fleur, - - - - -	46.	53 ^{''}	40 [']
* Chicoutimi, - - - - -	48	24	9
Portage des Roches, - - - - -	48	14	31
About half-way over Lake Tsinogomi, - - - - -	48	16	22
Where two parties met on Lake St. John, - - - - -	48	37	59
Peribonea River, - - - - -	48	42	37
Mistassini River, - - - - -	48	38	55
Ouiatshouan River, - - - - -	48	24	35
Metabitshuan River, - - - - -	48	23	12
* Tadousac, - - - - -	48	6	39

The climate of Chicoutimi, and lower down the Saguenay, seems to be much like that at Quebec, whilst it would appear, that about Lake St. John, the climate is as mild as that of Montreal, perhaps milder.

The monies placed at the disposal of the Commissioners did not admit of their obtaining all the information, which it would be desirable to have.—To complete our knowledge of the country, it would be requisite :—

1. To explore in every direction the country lying in the rear of Murray Bay, and St. Paul's Bay on the St. Lawrence on the one side, and Ha-Ha Bay, the Saguenay and Tadousac on the other.

2. To explore the country lying between Chicoutimi and Lake St. John, upon the south-west side of the river Chicoutimi, Lake Tsinogomi, &c.

3. To explore the old route from Charlesbourg to the Saguenay, which strikes the Saguenay half-way between Tadousac and Ha-Ha Bay.

4. To explore the country, likely to afford the most direct communication from Quebec to the old establishment of the Jesuits upon lake St. John, a distance of about 100 miles.

Enough, however, has been done to establish that there is a vast extent of cultivable land about Lake St. John and the Saguenay, and the waters connecting them, upon which it would be desirable to effect settlements.

It will be for the House in its wisdom to determine whether it may not be expedient to vote an additional sum of money for the obtaining of the required information.

Ordered, That the Chairman do leave the Chair and report.

All which is nevertheless humbly submitted.

A. STUART, Chairman.

Quebec, 17th February 1829.

To explore the old route from Chatham to the ...
which crosses the ... half way between ... and ...
A ... explore the ... to ... the ...
... from ... to the ...
St. John's ... of about 100 miles.

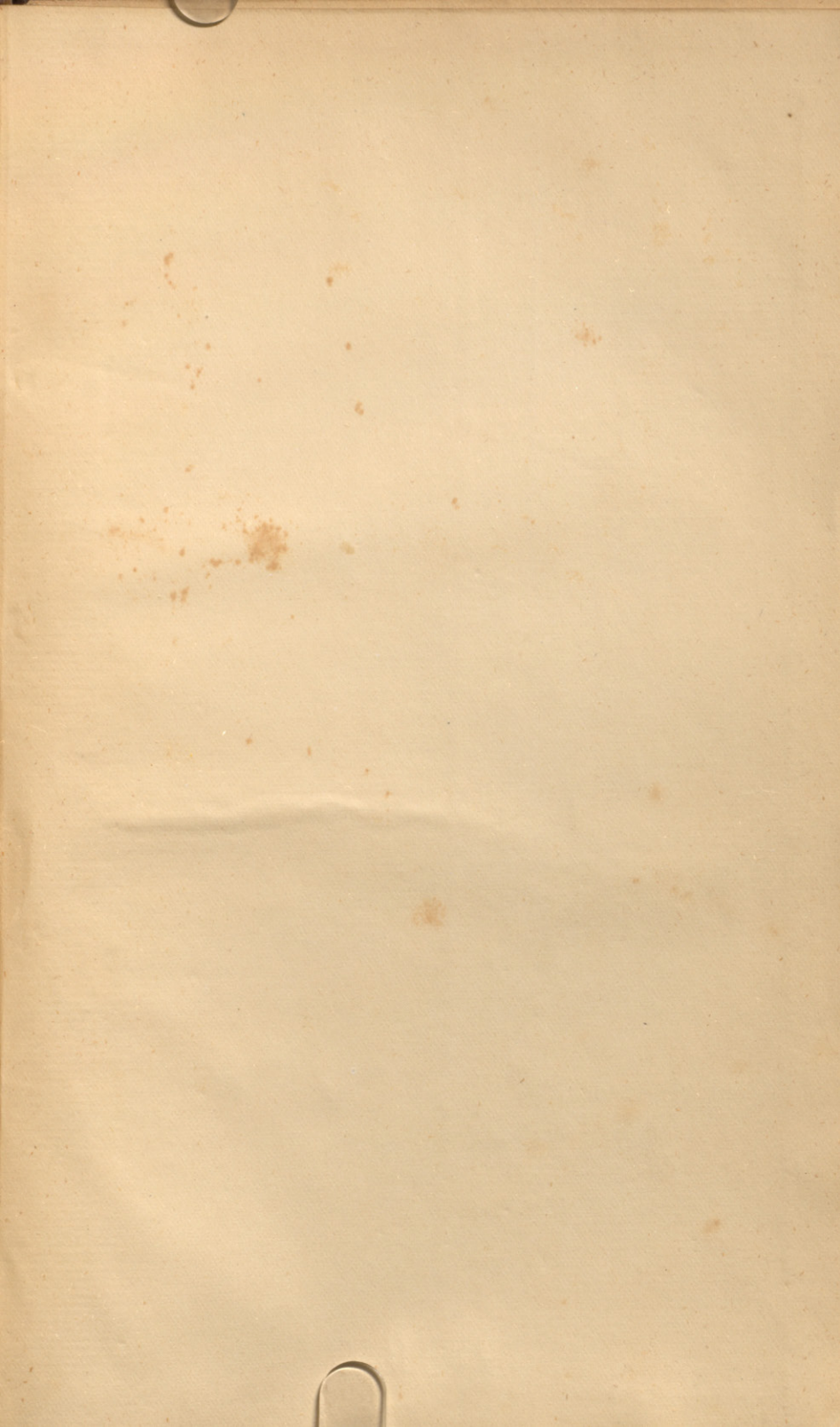
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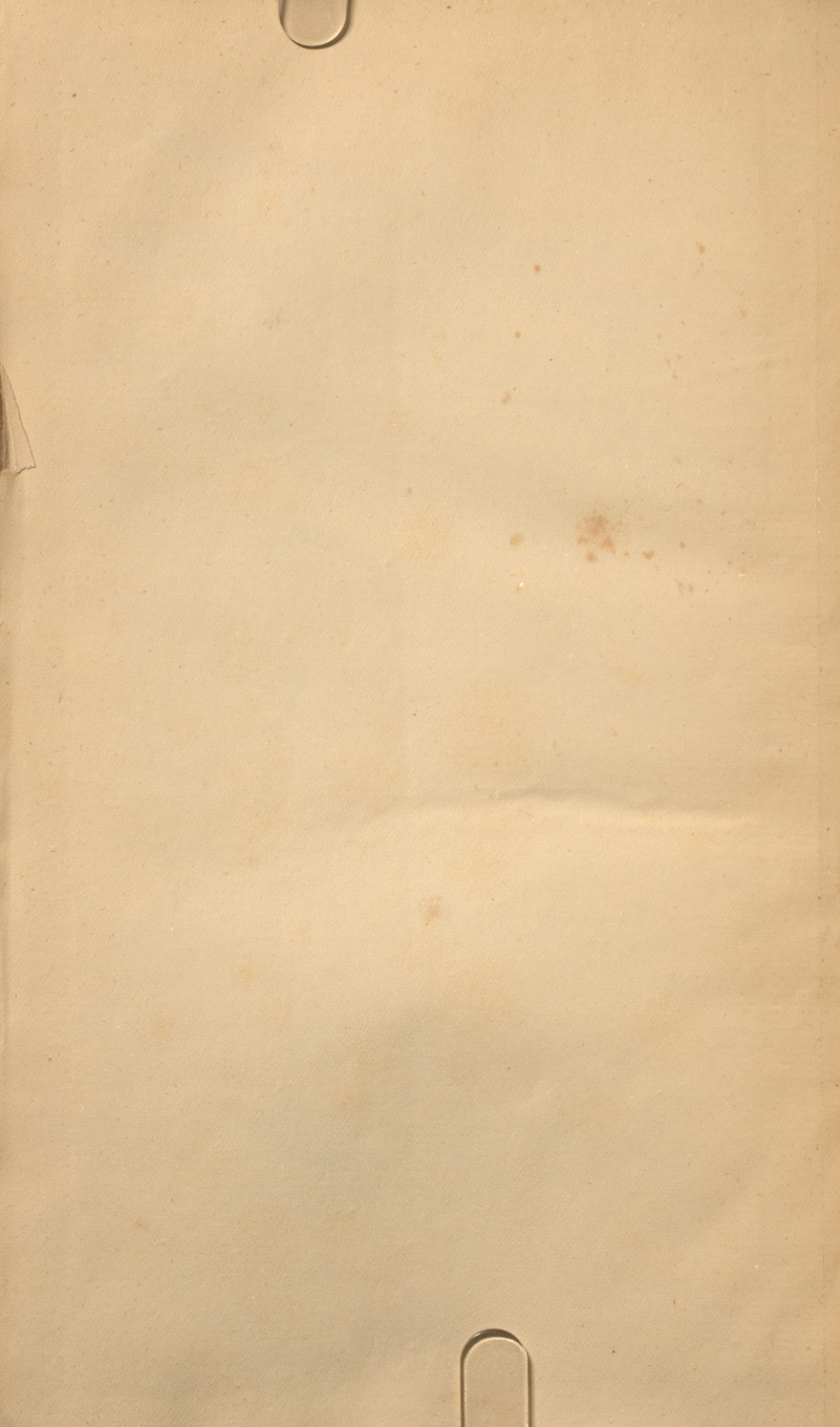
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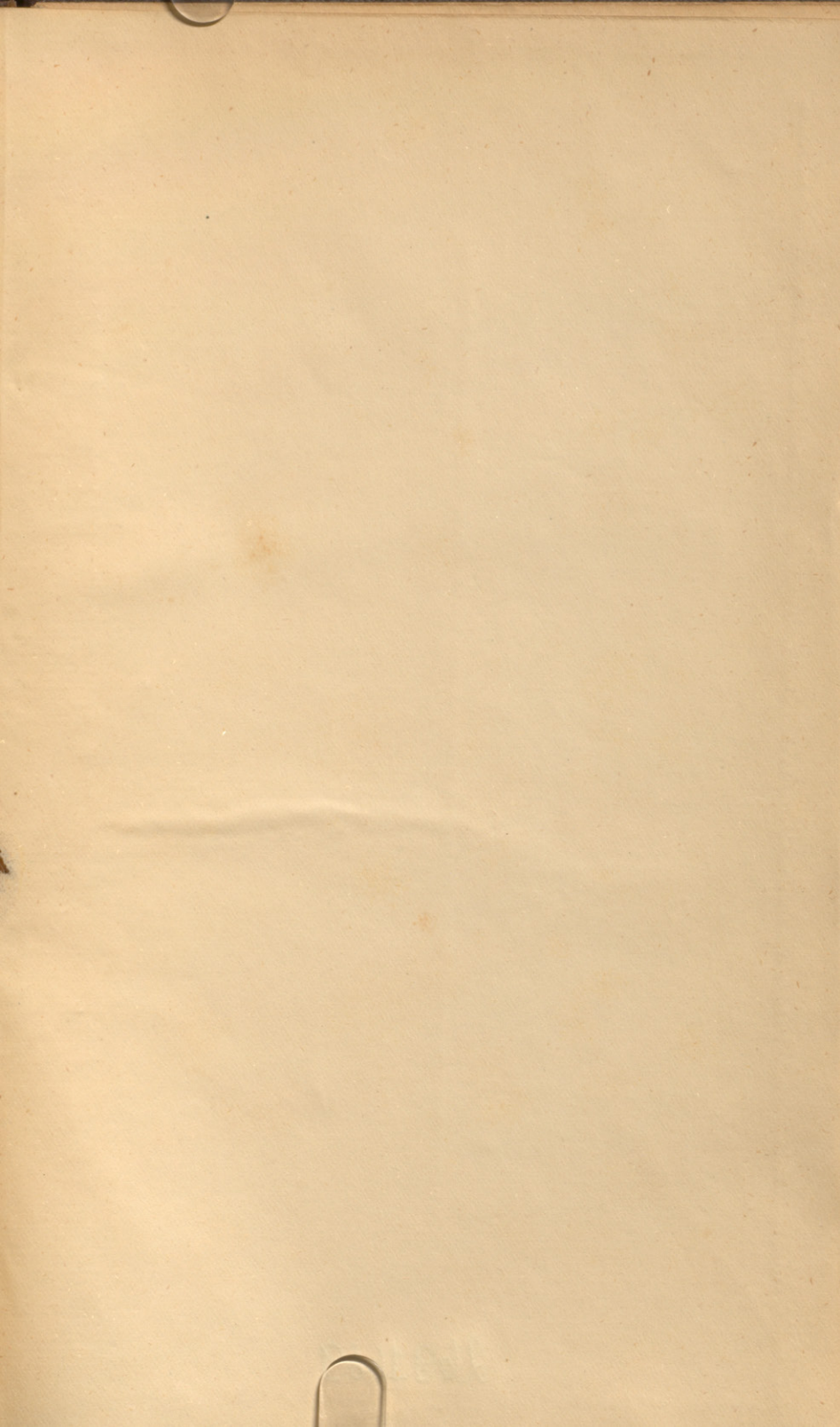
Ordered That the Chairman do leave the ... and a ...

All which is ...
A. STUART, Chairman

Given at ... 17th February 1829.







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