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THE ACADIAN PEOPLE.

BY JAMES HANNAY.

There are now upwards of one hundred thousand persons of French origin in the Maritime Provinces, the great majority of whom are known as "Acadians" because they are the descendants of the French settlers who were brought out to this country when it was a colony of France and was called "Acadia." The first settlement of Acadia took place in 1604, under de Monts and Champlain, but the place selected, St. Croix Island, proving unsuitable, the little French colony was removed to Port Royal in the spring of 1605. The colonists consisted of farmers and artisans, men well suited to the business they had in hand, but the colony was finally broken up by an English expedition from Virginia, under Argal, in 1613. There does not appear to have been any further attempt by the French to establish a settlement at Port Royal for about twenty years. In the meantime, Sir William Alexander had obtained from James I. of England, a grant of the country, and had established a colony of Scotchmen at Port Royal. This colony was, in its turn, broken up when Acadia was restored to France under the terms of the treaty of Saint Germain-en-Laye, made in 1632. Some of these Scotch colonists, however, remained in Acadia and mingled with the French settlers who were brought out after the country was restored to France.

It does not appear that any of the French of Champlain's colony remained in Acadia, although one or two of them went to Quebec. The origin of the Acadians therefore dates from the year of 1633, when Isaac de Razilly brought out a number of French settlers to La Have. Between that year and 1638, de Razilly and his lieutenant, Charnisay, brought out some sixty families of colonists, most of whom appear to have remained in Acadia. These people were all workers, mainly farmers and fishermen, with a few artisans, such as blacksmiths, carpenters and coopers, who were necessary to do the little work of the colony. At first they were settled at La Have, but a few years later most of them were removed to Port Royal, the name then given to the region about Annapolis, which must be regarded as the mother settlement of Acadia.

The French colonists who settled Acadia, came from Rochelle, Saintonge and Poitou, on the west coast of France, a tract of country

which has some features in common with Acadia; a country of marshes from which the sea was kept out by artificial dykes. This fact had a considerable influence on the settlement of Acadia, for the French dealt with the marsh lands of Port Royal in the same manner as they had treated similar marshes in France, and they depended upon them almost entirely for their sustenance. The marsh lands of Acadia were so extensive that they were much more than sufficient to maintain the population for more than a century, and for that reason the Acadians cleared a very limited area of forest land during their long occupation of the country. Acadia therefore remained a land of "forest primeval" until the English began to settle it, about the year 1760.

The sixty families of French who came out under de Razilly and Charnisay were the true founders of the Acadian people; for although other persons came from time to time to the little colony, there was no immigration of whole families, and only four women are known to have come to Acadia after the period of the original immigration, already mentioned. Therefore, although new names appear from time to time in the lists of Acadian settlers, they were merely those of individuals, such as discharged soldiers and transient working men, who had concluded to settle in the country and whose wives belonged to the original Acadian stock. This has given a unity to the Acadian people such as is hardly to be found in any other community, and has caused them to differ very materially, in appearance and otherwise, from the French Canadians of the province of Quebec.

The first census of Acadia of which we have any record was taken in the year 1671, when there were found to be seventy-five families, numbering four hundred and forty-one persons. The largest settlement was at Port Royal, where there were sixty-eight families, numbering three hundred and sixty-three persons. The manner in which these Acadians lived is very clearly shown by the details of this census. They depended largely upon their cattle and sheep. Of the former they possessed eight hundred and sixty-six, or almost two for every man, woman and child in the colony, and of the latter four hundred and seven. They had four hundred and twenty-nine acres of land under cultivation, and had harvested that year four thousand three hundred bushels of grain. It is evident that this statement of land under cultivation could only have referred to the land actually tilled in that particular year, and did not include the land upon which

hay was cut or that devoted to pasture. The grain produced, assuming it to have been wheat, was fully double the quantity that the little colony could use for food, and the produce of the cattle must have been much more than would be required for the support of these families. The surplus was sold to feed the little French garrison which was always stationed at Port Royal; and when Acadia passed into the hands of the English, in 1710, the custom was continued and the English garrison of Annapolis had their wants supplied by the produce of the farms in the vicinity of the fort. The Acadians of Chignecto, Mines, and their outlying settlements, found a market for their products at Boston and even at Louisbourg, which, after the loss of Acadia, became the great French stronghold of the Maritime provinces. In this way the Acadians became rich. They produced everything that was necessary to supply the wants of their families, and had a large surplus to sell, which they converted into specie and usually buried, as there were no banks in the country in which to deposit it. It is doubtful if there was anywhere at that time a peasantry in more comfortable circumstances or more affluent than the Acadians were from the time the English took possession of the country until their expulsion in 1755.

Another census of Acadia was taken in 1686, just fifteen years after the one already referred to. It then contained 855 inhabitants, of whom 592 resided at Port Royal. Two new settlements had in the meantime been founded, both of which were destined to become populous and wealthy, and to entirely overshadow the original colony at Port Royal. These were Beaubassin or Chignecto, the name then given to the territory about Sackville and Amherst, and Mines which included the region on the Basin of Minas, the place now described in the railway circulars as the Land of Evangeline. There were 95 families then residing at Port Royal, 27 more than in 1671; but the land they had under cultivation and their horned cattle had decreased. Their sheep had almost doubled, having risen from 407 to 627, and they possessed 351 swine, a species of live stock not mentioned in the census of 1671. Evidently considerable changes had taken place in their mode of living, due to causes which cannot very well be ascertained now. The settlement at Chignecto, although only a few years old, was flourishing. It had 127 inhabitants and more land under cultivation than Port Royal. Its cattle numbered 236, its sheep 111, and its swine 189. The Mines settlement had 57 inhabitants and

possessed 90 horned cattle, 21 sheep, and 67 swine. This was the humble beginning of a settlement where cattle a few years later were numbered by thousands. At Chignecto and Mines there were vast acres of marsh lands capable of supporting great herds, and the people who went to these new settlements speedily became rich. The progress of Chignecto was checked for a time by the expeditions from Massachusetts under Col. Church; but the prosperity of Mines encountered no such drawback, and it speedily became the most wealthy and populous settlement in Acadia.

The transfer of Acadia to Great Britain in 1710 did not at all affect the progress of the Acadian settlements. A census taken in 1714 shows that the population of Mines had risen to 878, a number almost as great as that of Port Royal, which had 895 inhabitants. The settlers of Mines were spreading themselves over the land and had established new colonies on many of the rivers flowing into the Basin of Minas, the Pizequid, the Gaspereaux, the Canards and other streams. The Port Royal colony was also more populous than it ever had been before; and, although a few families had left it, the bulk of the inhabitants continued to cling to the soil on which their fathers had lived so long. They were in the possession of some of the best soil in North America; they were in the enjoyment of peace, and they had therefore no inducement to seek their fortunes in another land which might not prove so congenial as that in which they were living. During the next forty years all the Acadian settlements grew rapidly, and in 1755, it is estimated that the Acadians numbered about 10,000 persons, a prodigious increase to take place in so short a period of time.

The Acadians were a people who lived very much by themselves, and therefore they acquired characteristics which were the outgrowth of their peculiar conditions. They were a very religious people, and were greatly under the influence of their clergy, whose power over them was felt in every relation of life. When this power was exercised in the interests of morality and religion it was a most wholesome influence and of the utmost benefit, but when it was used for political purposes it became a source of danger and led to the utter ruin of a people who might have remained always happy and prosperous.

Among the Acadians it was the custom to marry young, and as a consequence their families were usually large. Land was so abundant that a young man could not do better than take to himself a wife and

set up housekeeping on his own account. Their lives were simple and frugal and virtuous, but education was greatly neglected. Very few of the Acadians could read or write, and the literature of the world was a sealed book to them. This, however, was a condition not peculiar to the Acadians, but which also existed among the peasantry of France from which they sprang. In those days it was not thought necessary that a mere tiller of the soil should be able to read or write; indeed it was not until the present century that the great awakening took place as to the advantages of education which has placed that great blessing within reach of the humblest and made ignorance appear a badge of inferiority and disgrace.

THE BATTLE OF LUNDY'S LANE.

W. J. ROBERTSON, M. A.

The importance of the War of 1812 is not yet fully realized by English historians, although there are strong indications that the British world is at last beginning to see dimly that the future of the British Empire is deeply involved in the growth and development of Canada. Had Canada been conquered in the War of 1812, the whole course of British history would have been changed, and that for the worse. Had the war not taken place when it did, it is possible that the process of americanizing Upper Canada, which was then going on, might have ended as similar processes in Texas and California ended at a later date. But the result of this war, which has usually been looked upon as a great evil, effectually checked the tendency of citizens of the United States to settle in Canada without any intention of becoming British subjects. On the outbreak of hostilities, those unwilling to take the oath of allegiance were forced to leave the country, and never since has American influence been an important factor in our political development.

Of the many battles fought during this bitter struggle, the Battle of Lundy's Lane was the most stubbornly and fiercely contested. So evenly were the antagonists matched that American historians have ever since claimed the battle as an American victory. Needless to say

every Canadian writer has described the results as favorable to British arms. It is possible some of your readers may desire to know the truth of these rival claims; therefore, to satisfy a laudable curiosity, the reports of the British and American commanders, immediately after the battle was fought, are here presented. For these reports, as well as for a mass of other interesting contemporary documents, I am indebted to a publication known as the "Documentary History of the Campaign on the Niagara Frontier in 1814," of which Capt. Cruikshank, Fort Erie, is the learned editor. The italics are my own.

The first account of the battle here given is from a report of Sir Gordon Drummond, the British commander, to Sir George Prevost:

HEADQUARTERS, NIAGARA FALLS, 27th July, 1814.

Sir,—I embarked on board His Majesty's schooner "Netley," at York, on Sunday evening the 24th inst, and reached Niagara the following morning. Finding from Lieut.-Colonel Tucker that Major-General Riall was supposed to be moving towards the Falls of Niagara to support the advance of his division which he had pushed on to that place on the preceding evening, I ordered Lieut.-Colonel Morrison, with the 89th Regiment and a detachment of the Royals and King's, drawn from Forts George and Missassauga, to proceed to the same point, in order that with the united force I might act against the enemy (posted at Street's Creek, with his advance at Chippawa) on my arrival, if it should be found expedient. I ordered Lieut.-Colonel Tucker at the same time to proceed on the right bank of the river with three hundred of the 41st and about two hundred of the Royal Scots, and a body of Indian warriors, supported (on the river) by a party of armed seamen under Captain Dobbs, Royal Navy. The object of this movement was to disperse or capture a body of the enemy which was encamped at Lewiston. Some unavoidable delay having occurred in the march of the troops up the right bank, the enemy had moved off previous to Lieut.-Col. Tucker's arrival.

Having refreshed the troops at Queenston, and having brought across the 41st Royals and Indians, I sent back the 41st and 100th regiments to form the garrisons of the Forts George, Missassauga and Niagara, under Lieut.-Col. Tucker, and moved with the 89th and detachments of the Royals and King's, and Light Company of the 41st, in all about 800 men, to join Major-General Riall's division at the Falls. When arrived within a few miles of that position I met a report from Major-Gen. Riall that the enemy was advancing in great force. I immediately pushed on and joined the head of Lieut.-Colonel Morrison's column just as it reached the road leading towards the Beaver Dam, over the summit of the hill at Lundy's Lane. Instead of the whole of Major-General Riall's division, which I expected to have found occupying this position,

I found it almost in the occupation of the enemy, whose columns were within 600 yards of the top of the hill, and the surrounding woods filled with his light troops. The advance of Major-General Riall's division, consisting of the Glengarry Light Infantry and Incorporated Militia, having commenced their retreat, I counter-marched these corps and formed the 89th Regiment and Royal Scots detachments and 41st Light Company in the rear of the hill, their left resting on the great road; my two twenty-four-pounder brass field guns a little advanced in front of the centre on the summit of the hill; the Glengarry Light Infantry on the right; the Incorporated Militia and the detachment of the King's Regiment on the left of the great road; the squadron of the 19th Light Dragoons in rear of the left on the road. I had scarcely completed this formation when the whole front was warmly and closely engaged. The enemy's principal efforts were directed against our left and centre. After repeated attacks the troops on the left were partially forced back and the enemy gained a momentary possession of the road. This gave him, however, no material advantage, as the troops which had been forced back formed in the rear of the 89th Regiment, fronting the road, and securing the flank. It was during this short interval that Major-General Riall, having received a severe wound, was intercepted as he was passing to the rear, by a party of the enemy's cavalry, and made prisoner. In the centre the repeated and determined attacks of the enemy were met by the 89th Regiment, the detachments of the Royals and King's, and the Light Company of the 41st, with the most perfect steadiness and intrepid gallantry, and the enemy was constantly repulsed with very heavy loss. In so determined a manner were these attacks directed against our guns that our artillerymen were bayoneted by the enemy in the act of loading, and the muzzles of the enemy's guns were advanced within a few yards of ours. The darkness of the night during this extraordinary conflict occasioned several uncommon incidents. *Our troops having for a moment been pushed back, some of our guns remained for a few minutes in the enemy's hands; they were, however, not only quickly recovered, but the two pieces, a six-pounder and a five-and-a-half-inch howitzer which the enemy had brought up, were captured by us, together with several tumbrils; and in limbering up our guns at one period one of the enemy's six-pounders was put up by a mistake upon a limber of ours, and one of our six-pounders limbered on his, by which means the pieces were exchanged, and thus, though we captured two of his guns, yet, as he obtained one of ours, we have gained only one gun.*

About nine o'clock (the action having commenced at six) there was a short intermission of firing, during which the enemy was employed in bringing up the whole of the remaining force, and he shortly afterwards renewed his attack, but was everywhere repulsed with equal gallantry and success. About this period, the remainder of Major-General Riall's division, which had been ordered to retire on the advance of the enemy, consisting of the 103rd Regiment, under

Col. Scott, the Headquarter division of the 8th (or King's) flank companies, 104th and some detachments of militia under Lieut-Colonel Hamilton, inspecting field officer, joined the troops engaged, and I placed them in a second line, with the exception of the Royal Scots and flank companies 104th, with which I prolonged my front line on the right, where I was apprehensive of the enemy's outflanking me. The enemy's efforts to carry the hill were continued until about midnight when he had suffered so severely from the superior steadiness and discipline of His Majesty's troops, that he *gave up the contest and retreated with great precipitation to the camp beyond the Chippawa. On the following day he abandoned his camp, threw the greatest part of his baggage, camp equipage, and provisions into the rapids, and having set fire to Street's Mills and destroyed the bridge at Chippawa, continued his retreat in great disorder towards Fort Erie.* My light troops, cavalry, and Indians, are detached in pursuit and to harass his retreat, which I doubt not he will continue until he reaches his own shore.

The loss sustained by the enemy in this severe action cannot be estimated at *less than fifteen hundred men*, including *several hundred prisoners* left in our hands. His two commanding generals, Brown and Scott, are said to be wounded; his whole force, which has never been rated at less than *five thousand*, having been engaged.

Enclosed, I have the honor to transmit a return of our loss, which has been very considerable. [Total, including officers, 84 killed, 559 wounded, 193 missing, 42 prisoners.] The number of troops under my command did not for the first three hours, exceed *sixteen hundred men*; the addition of the troops under Colonel Scott did not increase it to more than *two thousand eight hundred* of every description.

The foregoing statement of General Drummond is very clear and definite, and is in marked contrast to the hesitating and somewhat confused accounts given by General Brown (the American commander) to the United States Secretary of War which follows:

Major-General Brown to the Secretary of War :

BUFFALO, 7th August, 1814.

Sir,—Confined as I was and have been since the last engagement with the enemy, I fear that the account I am about to give may be less full and satisfactory than under other circumstances it might have been made. I particularly fear that the conduct of the gallant men it was my fortune to lead will not be noticed in a way due to their fame and the Honor of our country.

You are already apprised that our army had, on the 25th ult., taken a position at Chippawa. About noon of that day Colonel Swift, who was posted at Lewiston, apprised me by express that the enemy had appeared in considerable

force in Queenston and on its heights; that four of the enemy's fleet had arrived during the preceding night and were then lying near Fort Niagara, and that a number of the enemy's boats were in view moving up the Straight. Within a few moments after this intelligence had been received, I was further informed by Captain Denman, of the Quarter Master's Department, that the enemy was landing at Lewiston, and that our baggage and stores at Schlosser and on their way thither were in danger of immediate capture. It is proper here to mention that having received advices as late as the 20th, from General Gaines, that our fleet was then in port and the Commodore sick, we ceased to look for co-operation from that quarter, and determined to disencumber ourselves of baggage and march directly for Burlington Heights. To mask this intention and to draw from Schlosser a small supply of provisions, I fell back upon Chippawa. As this arrangement, under the increased force of the enemy, left much at hazard on our side of the Niagara, and as it appeared by the before mentioned information that the enemy was about to avail himself of it, I conceived the most effectual method of recalling him from this object was to put myself in motion towards Queenston. General Scott, with the 1st Brigade, Towson's Artillery, and all the dragoons and mounted men, were accordingly put in march on the road leading thither, with orders to report if the enemy appeared — then to call for assistance if necessary.

On the General's arrival at the Falls, he learned that the enemy was in force directly in his front, narrow pieces of woods alone intercepting his view of them. Waiting only to give this information he advanced upon them; by the time Assistant-Adj. Jones had delivered his message the action began; and before the remaining part of the division had crossed the Chippawa, it had become close and general between the advanced corps. Though General Ripley with the second Brigade, Major Hindman with the corps of artillery, and General Porter at the head of his command, had respectively pressed forward with ardor, it was not less than an hour before they were brought to sustain General Scott, during which time his command most skilfully and gallantly maintained the conflict. Upon my arrival I found that the General had passed the wood and engaged the enemy on the Queenston road and on the ground to the left of it with the 9th, 11th, and 22nd Regiments, with Towson's Artillery—the 25th had been thrown to the right to be governed by circumstances. Apprehending that these corps were much exhausted, and knowing that they suffered severely, I determined to interpose a new line with the advancing troops, and thus disengage General Scott and hold his brigade in reserve; orders were accordingly given to General Ripley. The enemy's artillery at this moment occupied a hill which gave him great advantages and was the key to the whole position; it was supported by a line of infantry. To secure the victory it was necessary to carry this artillery and seize the height. This duty was assigned to Colonel Miller, while to favor its execution the 1st Regiment,

under the command of Colonel Nicholas, was directed to menace and amuse the infantry. To my great mortification this regiment, after a discharge or two, gave way and retreated some distance before it could be recalled, though it is believed the officers of the regiment exerted themselves to shorten this distance. In the meantime Colonel Miller, without regard to this occurrence, advanced steadily and gallantly to his object and carried the height and the cannon. General Ripley brought up the 23rd (which had also faltered) to his support, and the enemy disappeared from before them. The 1st Regiment was now brought into line on the left of the 21st and the detachments of the 17th and 19th, General Porter occupying with his command the extreme left, about the time Colonel Miller carried the enemy's cannon.

The 25th Regiment, under Major Jessup, was engaged in a more obstinate contest with all that remained to dispute with us the field of battle. The Major, as has been already stated, had been ordered by General Scott at the commencement of the action to take ground to the right; he had succeeded in turning the enemy's left flank—had captured (by a detachment under Captain Ketchum) General Riall and sundry other officers—and showed himself again in a blaze of fire, which defeated or destroyed a very superior force of the enemy. He was ordered to form on the right of 22nd Regiment. The enemy rallying his forces, and as is believed, having received reinforcements, now attempted to drive us from our position and regain his artillery; our line was unshaken and the enemy repulsed. Two other attempts having the same object had the same issue.

General Scott was again engaged in repelling the former of these, and the last I saw of him on the field of battle he was near the head of his column, and giving to its march a direction that would have placed him on the enemy's right. It was with great pleasure I saw the good order and intrepidity of General Porter's volunteers from the moment of arrival; but during the last charge of the enemy those qualities were conspicuous—stimulated by the example set them by their gallant leader, by Major Wood, of the Pennsylvania corps, by Colonel Dobbin, of New York, and by their officers generally—they precipitated themselves upon the enemy's line and made all the prisoners which were taken at this point of the action.

Having been for some time wounded, and being a good deal exhausted by loss of blood, it became my wish to devolve the command on General Scott and retire from the field, but on inquiry I had the misfortune to learn that he was disabled by wounds. I therefore kept my post, and had the satisfaction of seeing the enemy's last effort repulsed. I now consigned the command to General Ripley.

While retiring from the field I saw and felt that the victory was complete on our part if proper measures were promptly adopted to secure it. The exhaustion of the men was, however, such as made some refreshment necessary; they particu-

larly required water—I was myself extremely sensible of the want of this necessary article. I therefore believed it proper that General Ripley and the troops should return to camp after bringing off the dead, the wounded and the artillery, and in this I saw no difficulty, as the enemy had entirely ceased to act.

Within an hour after my arrival in camp I was informed that General Ripley had returned without annoyance and in good order. I now sent for him, and after giving him my reasons for the measure I was about to adopt, ordered him to put the troops in the very best possible condition, to give to them the necessary refreshment, to take with him the picquets and camp guards and every other description of force; to put himself on the field of battle as the day dawned, and there to meet and beat the enemy if he appeared. To this order he made no objection and I relied upon its execution; *it was not executed*. I feel most sensibly how inadequate are my powers in speaking of the troops to do justice either to their merits or to my own sense of them—*under able direction they might have done more and better*.

The official report of the American losses was as follows: killed, 171; wounded, 570; missing, 117; total, 858. The estimate seems altogether too low, if we are to believe other and apparently reliable statements made by participants in the struggle.

That the Americans were not at all satisfied with the result of this engagement, is shown very clearly by the following extracts from a letter written by Major-General Peter B. Porter (commander of American Militia), to Governor D. D. Tompkins:

FORT ERIE, U. C., July 29, 1814.

Sir,—Our Canadian campaign seems drawing to a close, or must at any rate be suspended for want of reinforcements. After a month spent in marching and countermarching we have got back to the point from which we set out, much impaired in strength, but, I hope, not disheartened.

Besides almost daily skirmishing we have had two severe general engagements. . . . In the last (Landy's Lane) we were most unlucky both as to time and place, the action having been commenced three miles from camp, about sundown, with one-third of our army against a greatly superior force occupying a commanding position. . . . The enemy's battery of seven pieces of artillery was carried by a charge, his commanding position occupied, and four desperate and deliberate attempts to regain it by desperate charges successfully repelled. Our victory was complete, but alas, this victory gained by exhibitions of bravery never surpassed in this country, *was converted into a defeat by a precipitate retreat, leaving the dead, the wounded, and captured artillery, and our hard earned honor, to the enemy*. . . . Do not understand me as intending to cast a heavy censure on General Ripley for *the retreat*

from Lundy's Lane. He is a very clever fellow, and besides having been in opinion opposed to General Brown's plan of operations, he on that night, I am told by him, received a positive order from General Brown, at Chippawa, to retire.

The above extracts give the reader a fair summary of the contemporary evidence relating to this famous struggle. To those anxious for fuller information I would recommend in addition to the work from which these extracts are taken, the most interesting and attractive volume by Mrs. Edgar, entitled "Ten Years of the War of 1812."

THE PENNFIELD COLONY.

BY JAMES VROOM.

"The Loyalists have made many new settlements in the Bay of Fundy; at Passamaquoddy is a settlement of Quakers."

So says a British officer, writing from Nova Scotia in the autumn of 1783. The Quaker Loyalists to whom he refers were then established at Beaver Harbor, and had given their little settlement the name of Penn's Field, since contracted to Pennfield.

From the beginning of their history in America, the members of the Society of Friends, commonly called Quakers, had been victims of suspicion and persecution.¹ Pennsylvania was an asylum for many. In West New Jersey, however, where, in the early part of the last century they formed, in some districts, by far the most numerous and wealthy part of the population, they were less fortunate; and very much of the disaffection and disorder that prevailed in the Jerseys was due to the ill feeling aroused by the presence of Quakers in the governor's council and assembly.

The Quakers at that time were accused of being disloyal to the crown, because they refused to do military service and opposed the

¹ Imprisonment, whipping, branding, mutilation, banishment and death were the punishments inflicted, under Massachusetts' laws, upon the "cursed sect of heretics lately risen up in the world, which are commonly called Quakers;" and it was not until 1681 that the death penalty was abolished. Thus have the Pilgrim Fathers of Massachusetts

"Left unstained what there they found,—freedom to worship God!"

(C) We whose names are hereunto subscribed do agree
to settle ourselves together on the west of Johns in
Nova Scotia

No slave-master admitted

Johna Knight

John Rankin

John Loofbrow

Jam. Fairbank

Gid. Mason

Amos Strickland

Evan Griffiths

Josiah Tomlinson

John Strickland

Leah Price

Nathaniel Loofbrow

Daniel Keytten

Samuel Tomlinson

Peter Walton

Abram Rankin

Samuel Matthews

Joseph. Thorne

Jewish Fittes

Moses Winder

Thomas Buckley juner

Thomas Buckley

John Burk

Edward Burk

Andrew hamilton

Benj. Brown

Richard Buffington

Jonathan Paul

John Dennis

Mathias Ship

Richard Lawrence

Amos Woodward

Isaac Woodward

John Hinckman

4

Brad Done

Joseph Way

Daniel Southwick

Jon. Remington

Geo. Shorn Reminger

Richard Matthews

Abram Wood Ward

Amos White

Felice Matheson

Anthony Woodward

Anthony Woodward Junr

Almer Hamton

W. B. W. O. S.

Robert Woodward

Jacob Woodward

George Fields

levying of taxes for war purposes. For the same reasons, two generations later, when disloyalty to the crown would have commended them to popular favor, they were accused of loyalty.

The Philadelphia Friends were suspected of being loyal before the British forces occupied the city; and the men were carried off to inland places and kept under watch until the close of the war, while the women and children were left exposed to insult and robbery. Joshua Knight, a man of some prominence, who lived in Abbington, a suburb of Philadelphia, with some of his fellow sufferers, either before or after the occupation, had sought protection from the British in New York. Apparently at his suggestion, a meeting of Friends was held there early in June, 1783, at which arrangements were made for going to Nova Scotia; and a month later the following advertisement appeared:

“Notice is hereby given to those of the people called Quakers who have entered into an agreement to settle together in Nova Scotia, that they are requested to meet at the house of Joshua Knight, No. 36 in Chatham Street, a little above the Tea-Water Pump, on Seventh Day next, the 5th of July, at four o'clock, afternoon, in order to conclude upon some matters of importance to them; and those who mean to join the above mentioned body are requested to call at No. 188 Water Street, between the Coffee-House Bridge and the Fly-Market,¹ and have their names entered as soon as possible.”

New York, July 2, 1783.

The reduced *fac simile* of the agreement here mentioned will be found specially interesting because of the words written large above the signatures, “No slave-master admitted.” This, it must be remembered, was fifty years before the abolition of slavery in the British West Indies; and eighty years before President Lincoln’s emancipation proclamation put an end to slavery in the United States.²

The Pennfield Quakers were ill prepared for the struggle before them. Their property had been confiscated by the Whig authorities; and the most hardy were unfitted for the rough experiences of pioneer life. After a few years of hardship and destitution, their village was swept away by a forest fire, and their colony was broken up, a few families only, including that of Joshua Knight, returning to begin again the settlement at Beaver Harbor.

¹ A corruption of the Dutch name *Vallei Markt*, (Valley Market).

² As early as 1727, in Great Britain, the Friends had taken strong grounds against the slave trade; and in 1761, it was resolved to disown any member of the Society who should have any concern in the traffic.—*Gay Andras in the Canadian Magazine*.

HISTORY IN BOUNDARY LINES—ILLUSTRATED BY NEW BRUNSWICK.

BY W. F. GANONG.

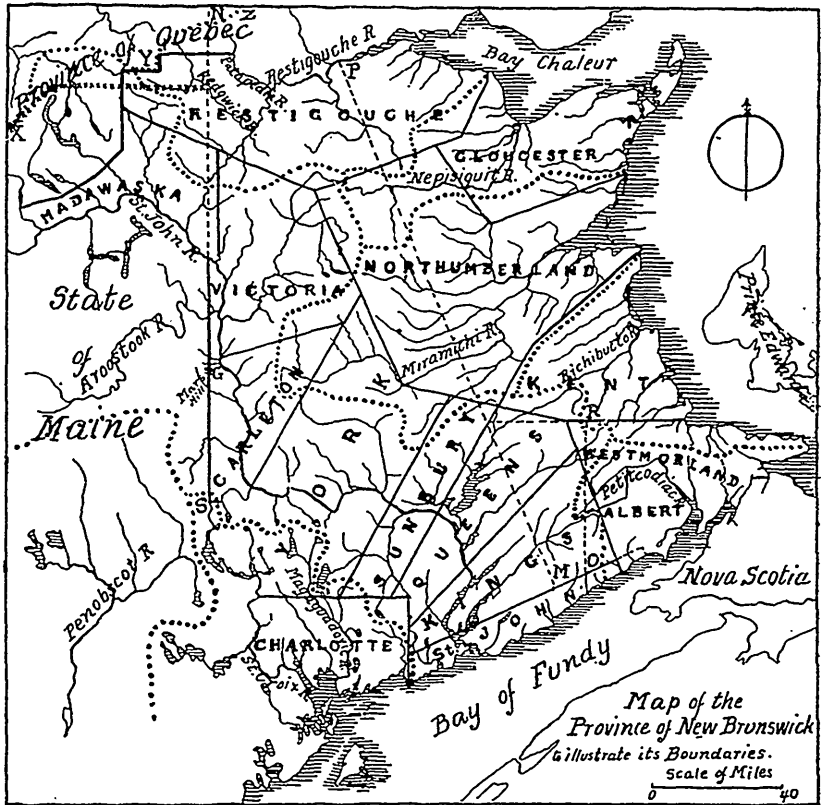
When I was a boy at school, I used to wonder why the boundary lines of New Brunswick run so strangely as they do, in such seemingly lawless courses. I have since found out that there is a reason for every feature of every line, that the peculiar province boundaries have had a long and devious history, and that the county lines are arranged upon an orderly and admirable system. I shall trace briefly the evolution of these lines for New Brunswick, though no doubt those of some of the other provinces are not inferior in interest.

The boundaries of New Brunswick are partly natural and partly artificial, and include the *International or Maine* boundary, the *Quebec* boundary and the *Nova Scotia* boundary. All three of these have been much in dispute, referred to commissions for decision, and settled finally by compromise. Most important in all respects, however, is the *International* boundary. But so long and complicated is its history that a mere outline of all of its vicissitudes would require many times the space the editor allows for this article, and a collection of the many books and reports that have been published about it would form a considerable library, despite which, however, its true and impartial history has not yet been written. But the actual forward steps in its evolution may be briefly traced.

In 1621 King James the First granted to Sir William Alexander a great territory, to be called *Nova Scotia* (including the present New Brunswick), whose western boundary was to be formed by the river *St. Croix* to its westernmost source, and thence by a north line to the *St. Lawrence*. This was the real origin of the present boundary, and the question arises, why was the *St. Croix* chosen? It was no doubt because the *St. Croix* was the only considerable river known by name (or otherwise) in that vicinity to King James and his advisers, and it was known to them only through its prominence on the maps and in the narratives of Champlain, whose ill-fated attempt with DeMonts to found a settlement there in 1604 was well-known to them.

The first boundary then of *Nova Scotia* followed the *St. Croix* and a north line from its westernmost source to the *River St. Lawrence*. So it remained for nearly one hundred and fifty years, and thus it is

marked on numerous English maps of the time, though in this interval the province passed twice into the possession of the French, who claimed for it, as the ancient Acadia, somewhat different limits. In 1763, however, all questions of boundary between England and France in Canada were set at rest forever when New France was ceded to England, as a result of the victories of Wolfe. In that year King George III established the Province of Quebec, and made its southern



boundary "the Highlands which divide the rivers that empty themselves into the said river St. Lawrence from those which fall into the sea"; and in the same year, in the Commission to a Governor of Nova Scotia, the northern boundary of the latter province is defined as formed "by the southern boundary of our Province of Quebec," and its western boundary by the "River St. Croix, by the said River to its source, and by a line drawn due north from thence to the southern

boundary of our Colony of Quebec." If, now, one turns to the maps of that time, he finds that they all show the north line from the St. Croix crossing highlands separating rivers falling into the St. Lawrence, from those falling into the St. John and thence into the sea, *i. e.*, the Atlantic Ocean through the Bay of Fundy. In this the maps were wrong, for really these highlands separate St. Lawrence and Restigouche waters. From 1763 to 1783, all of the maps, practically without exception, show the southern boundary of Quebec following the highlands [X Y Z on the accompanying map], and also the western boundary of Nova Scotia running north to those highlands [the line S N on the map], while all east of it was Nova Scotia and all west was part of Massachusetts which then included Maine.

In 1776 began the revolution, which ended in 1783 with the Independence of the United States. Nova Scotia (then including New Brunswick) remained loyal to the King; Massachusetts (then including Maine) became one of the independent states, and naturally the line between them became the new International boundary. The treaty of 1783 describes the boundary thus: "From the northwest angle of Nova Scotia, *viz.*, that angle which is formed by a line drawn due north from the source of the St. Croix River, to the Highlands, along the said Highlands which divide those rivers that empty themselves into the River St. Lawrence, from those which fall into the Atlantic Ocean," and it is noticeable how closely the language used in this treaty is like that of the earlier boundaries assigned to Nova Scotia and Massachusetts. Apparently, then, the International line was unmistakable; and it promised, as the treaty hopefully predicted, to prevent for the future all disputes about boundaries. But alas for human foresight! This boundary was for over half a century a subject of bitter contention, leading almost to war, and was only settled finally by the labors of successive commissions and a compromise satisfactory to neither party. First of all it was found not easy to settle which of the rivers emptying into Passamaquoddy Bay was the real St. Croix of the treaty, the Americans claiming that the Magaguadavic was meant. To settle this point a special commission was appointed, which in 1798 decided upon the present river called St. Croix, chiefly as a result of the examination of the maps and narratives of Champlain and the discovery of remains of his settlement on St. Croix Island. A question also arose as to which of the two nearly equal branches of the St. Croix was to be chosen, and this commission

decided upon the one coming from the north, and at its source they fixed the starting-point of the due north line (at S on our map), thus finally locating this important point. But two other important questions now arose, one as to the boundary line between some of the islands in Passamaquoddy Bay, and another as to the position of the highlands of the treaty, and hence as to the length of the due north line from the source of the St. Croix.

To settle these points another commission was appointed in 1816, which the next year rendered its decision upon the former point, drawing the line as it at present exists among the islands; but it was unable to come to a decision on the latter. On the one hand the Americans contended that the Treaty of 1783 intended to keep the old boundary between Nova Scotia and Massachusetts, and hence the north line should run north to the highlands south of the St Lawrence (to the point N on our map), while the British claimed that no such extension of the line was intended by the Treaty, since it would thrust Maine far into British America, cutting of communication between Nova Scotia and Quebec, and they claimed moreover that no such "North-west angle of Nova Scotia" as is described in the Treaty exists. They maintained that the north line should stop at Mars Hill south of the Aroostook (at the point G on our map) and run westward along the highlands south of that river. The claims of both nations were urged with great perseverance and immense legal subtlety, but neither could convince the other, and in 1829 the whole subject was referred for arbitration to the King of the Netherlands, who in 1831 decided for neither party, but "splt the difference" between their claims by making the north line stop at the St. John and the boundary follow the St. John and the St. Francis to the source of the latter. This decision was rejected by the United States Senate, and negotiations and disputes continued until 1839 when local contests over lumber privileges in the Aroostook valley threatened to bring the two countries again to war. The situation had become intolerable to both countries and in 1842, Lord Ashburton was sent to Washington with instructions to settle the whole question, and he was met in a similar spirit by Webster on behalf of the United States. The result, known as the Ashburton Treaty, was the final establishment of the present line, which so far as New Brunswick is concerned, follows precisely that suggested by the King of the Netherlands, *i. e.*, the north line stops at the St. John which becomes the boundary to the St. Francis, which

latter river continues it. But neither Maine nor New Brunswick has ever been satisfied with this settlement, each claiming that it had been defrauded for the sake of the other, both forgetting that in so complicated and vexed a matter, a compromise or "splitting of the difference" is the only safe course. Truly, then, the western boundary of New Brunswick has had a devious history.

We shall next consider briefly the curious boundary between New Brunswick and Quebec. Starting where the St. Francis river leaves its lowermost lake, it runs (as shown by the accompanying map) first a little north of east, then a little more northerly, then about north-east, then north, then east, north again, east again to the Patapedia River, which it follows to the Restigouche and thence to the Bay Chaleur. But what is the meaning of these curious lines running so regardlessly of the natural features of the country? Before 1783 the boundary between these provinces was considered to be, as shown on all the maps of the time, the watershed separating rivers flowing into the St. Lawrence from those flowing southward. In 1784 New Brunswick was separated from Nova Scotia as a distinct province, and some attempts were made to settle the boundary between it and Quebec. Despite considerable discussion, no progress was made until after the settlement of the International boundary in 1842, but soon after that year the subject was seriously taken up. It was found, however, that the views of the authorities of the two provinces were hopelessly discordant, for while New Brunswick claimed everything south of the St. Lawrence watershed, Quebec claimed as far south as a line starting as Mars Hill (at G on our map) and running south and east of the Tobique and Upsalquitch rivers to the mouth of the Restigouche. Plainly no agreement could be reached between the provinces themselves, and in 1846, at the suggestion of the Right Honorable W. E. Gladstone, then Secretary of State for the Colonies, a commission was appointed to investigate the claims of the provinces and to recommend a line. After a thorough examination of the question, and a consideration of numerous proposed lines, the Commission recommended a compromise line intended to split the difference between the two claims. This line was to be a continuation of the International line between Maine and Quebec, until it intersected the parallel of forty-seven degrees, fifty minutes, which it was to follow to the Kedgwick river, and thence by the Kedgwick and Restigouche to the Bay Chaleur. This line is shown in part by the line of small 'x's on our

map. But this decision pleased neither province, least of all Quebec, and in 1851 the matter was referred to still another Commission whose third member was Dr. Stephen Lushington of London. Dr. Lushington took the line of the previous Commission as a basis, and finding that Quebec was particularly aggrieved because the old Seigniories of Temiscouata and Madawaska, which it anciently possessed, had been awarded to New Brunswick, he restored them to Quebec, giving new Brunswick as compensation the land between the Kedgewick and the Miscouche or Patapedia. Thus was the first part of the line fixed, *i. e.*, the part twelve miles long which crosses the Madawaska at right angles, this being the precise southern boundary of the old Seigniorie. Then to give the upper St. John to New Brunswick (though Quebec had claimed all west of the continued north line) a line was run approximately parallel with the river, running to one mile south of Long lake (to give this lake to Québec) and thence to the outlet of the lower lake on the St. Francis. From the eastern end of the Seigniorial line, the boundary was to run north and follow tangent lines of the watersheds separating waters of the Rimouski, Green River, and Restigouche (thus originating the curious angles at Y on our map) thence along the 48th parallel to the Miscouche River, thence to the Restigouche and to Bay Chaleur. After some further discussion, this line proposed by Lushington was adopted, and is practically the line as it runs to-day. It was later found that the Miscouche and Patapedia had been confused on the maps, and the latter was adopted; in 1855, the boundary was surveyed and thus closed another complicated chapter in the history of our boundaries.

The Nova Scotia boundary has a briefer history, but in proportion to its length can show almost as much contention as the others. The Misseguash river had been considered by the French as the boundary between the Acadia they ceded to the British in 1713 and the mainland which they considered part of New France. When New Brunswick was separated from Nova Scotia in 1784 the Misseguash was adopted as the boundary, which was to be followed to its source and thence run in a straight line to the nearest part of Baie Verte (later altered to a due east line from its source). Nova Scotia was never satisfied with this boundary, and in 1793 made an attempt to have it altered to the head of the Memramcook and thence to Shediac, in order to include all of the old Cumberland settlements in that province, but this attempt failed. The Misseguash in its upper course

however becomes very difficult to trace, as it is lost in a maze of lakes and marshes, nor was it easy to determine from what point the line from its head was to run. Accordingly, in 1836 a commission was appointed which later agreed upon the present compromise line, which follows the Missequash to Black Island whence a surveyed line runs to the head of the Missequash, whence a due east line runs to the Tidnish River.

Very different has been the history of our county lines, though proposals have more than once been made to change even these. When one looks first at the map of New Brunswick, the counties seem to have no relation to any natural features of the country. But a closer inspection shows that they do follow a definite system, namely, the natural grouping of the rivers. Thus Charlotte includes the basins of the several rivers falling into Passamaquoddy Bay. A row of eight counties follows the St. John, with their intermediate lines usually crossing that river at right angles, whence it comes to pass that the great curve of the St. John in its lower course makes five of these counties radiate from Charlotte. Westmorland and Albert include the Petitcodiac system; Kent includes the several small rivers, of which the Richibucto is the chief; Northumberland covers the Miramichi basin, Gloucester the Nepisiguit and smaller streams of the northeast corner, while Restigouche includes the river of the same name with its chief branches.

Thus our chief county lines (excepting the cross lines along the St. John, and the Petitcodiac) were obviously intended to follow the watersheds, and that they do not do so more closely is due to three causes: first, for convenience sake the lines are best made straight, and hence they cannot follow exactly the crooked watersheds; second, in some cases (as the Miramichi) some of our rivers head so far across the province towards the valleys of others that it is more convenient to include their sources in other counties; third, in many cases the geography of the province was very imperfectly known when the lines were established by law, so that when they came to be actually surveyed they often ran very differently from what was expected, and in some cases they were later changed. Allowing for these causes of confusion, we must admit that our counties, as a whole, do follow admirably the natural river systems of the province. Why, now, was this system adopted? Why were the boundaries made to run along the watersheds, where they are

difficult to find, instead of along the rivers themselves, where they would be obvious? The answer will be plain to all who recall the conditions of travel and settlement in the early days of the province. Until well into this century there were no good roads, and of course no railroads, and nearly all travel was by water, while the settlements themselves were grouped about the navigable waters of rivers and harbors. In establishing counties, therefore, it was natural to group the settlements of a natural river system or basin together into one county, and to place the county-town as nearly as possible in their centre where it could easily be reached by water. This, of course, necessitated running the boundaries along the watersheds. If, on the other hand, the rivers had been adopted as boundaries, it would have been necessary for many of the citizens of any county to cross an uninhabited and pathless watershed to reach their county town, even though the county town of another county were just across the river from their homes.

The history of the county lines of New Brunswick shows clearly enough that these were the principles in the minds of Governor Carleton and his council when they first laid out the province into counties in 1785, and for his foresight in this, as well as for many other wise acts, Governor Carleton deserves our thanks and admiration. As laid out in 1785 the province included eight counties, Charlotte (the only one now retaining its original limits), St. John, Kings, Queens, Sunbury, York, Westmorland and Northumberland. The original limits of St. John are shown on our map, as is the original position of the line separating the four other river counties from the two North Shore counties (*i. e.*, M P on the map). This line was soon altered in part to the position OR, and still later to its present position. The other counties were set off later, from time to time; and we could have no better tribute to the wisdom of Governor Carleton in establishing the original eight counties as he did than the fact that his successors established the seven additional counties upon precisely the same principles.

THE PHYSIOGRAPHY OF NEW BRUNSWICK.

By W. J. WILSON, PH.B., of the Geological Survey of Canada.

The rock formations of a country have a great influence in determining the character of its physical features. A brief description of the underlying rocks of New Brunswick will, therefore, be necessary before we can get a clear idea of its mountains, lakes and rivers.

Beginning at the south we find an irregular belt about thirty miles wide along the coast of the Bay of Fundy, composed of granite and crystalline rocks, which are much disturbed and thrown up into ridges. North of this belt lies a large triangular area of sandstone, comprising a large part of Sunbury, Queens, Westmorland, Albert, Northumberland and Gloucester counties, and all of Kent county. The western limit of this area is in York county, west of Oromocto lake, from which the southern boundary extends to near the mouth of the Petitcodiac river, and the northern boundary to Bathurst. These sandstones, for the most part, lie flat as at first deposited. Northwest of this sandstone area the rocks are principally slates and limestone with large masses of granite appearing in different places. These rocks are much changed and hardened, and instead of lying flat are thrown up at various angles, forming high ridges and lofty isolated peaks.

The sandstones, occupying the middle and eastern part of the province, were the last laid down, and with the exception of two or three small areas, as at St. Martins and on the Island of Grand Manan, are the newest rocks in New Brunswick. These sandstones, slates, etc., are sedimentary rocks, that is they were spread out layer upon layer on the shores and bottoms of ponds, lakes and oceans in the form of clay, sand and gravel, carried down by streams and rivers, and, after the lapse of long ages, they were hardened and became solid rock. Geologists divide the rocks thus formed into periods, giving each a name. The sandstone referred to above belongs to what is called the Carboniferous Period, because large deposits of coal are found in it. They have also estimated the relative time in which the rocks of each period were formed, and they give almost one-half of the whole time to the formations that are later than the carboniferous.

Now, as there is only a very small portion of New Brunswick occupied by rocks newer than the carboniferous, it is altogether

probable that this province was above the level of the sea through the millions of years during which the later formations were formed in other places, and was exposed to the action of the atmosphere, water, heat and cold and all other forces which wear down the earth's surface and tend to reduce it to a plane. As a result of this long exposure there are no very high mountains, and the rivers have worn out deep valleys for themselves, many of them through the hardest rock.

The most marked feature of the southern highlands is a somewhat regular ridge, almost continuous, extending from Maine to the St. John river in Queens county, and eastward through Kings county, ending in Butternut Ridge. This ridge rises eight or nine hundred feet above the surrounding country and includes some high peaks, as Bald mountain (1150-1400 feet high), Prospect mountain and Eagle Rock, near the Nerepis river; Mount Pleasant, Porcupine and Red Rock mountains further west in Charlotte county, and Ben Lomond and Bloomsbury mountain east of the St. John river. The general direction of this ridge is parallel to the coast and it is cut through in many places by rivers flowing into the Bay of Fundy, sometimes through valleys not more than 300 feet above sea-level.

East of the St. John river there are altogether five parallel ridges running in an easterly direction, rising to an average height of 1000 feet with river valleys between. The highest of these ridges skirts the Bay of Fundy and contains Bloomsbury mountain and the Quaco hills. It separates into two or more ridges ending in Albert county in Caledonia mountain and Shepody mountain (1050 feet high).

The triangular area of sandstone presents a comparatively level surface and nowhere rises above 800 feet, the general level especially in the eastern part being below 300 feet.

The northern highlands contain the highest land in the province. West of the St. John river, in York and Carleton counties, the land rises in several peaks and ridges to a height of 800 or 900 feet, notably Oak mountain, Carrol Ridge, Shegomoc Ridge and Dorrington Hill, while the general level is about 500 feet.

East of the St. John river the land rises to the watershed dividing the Tobique and other tributaries of the St. John from eastward flowing rivers where the highest land in the province is situated. Mountains and broken ranges cross this tract in all directions and reach the St. John valley in the vicinity of Mars Hill (1688 feet high). Northward on this slope the highest summits are Belleville and Green

mountain and the general level is 800 to 1000 feet. From the height of land to the shores of the Gulf there is much variety. About the head waters of the Tobique, Miramichi, Nipisiquit and Upsalquitch rivers there is a rugged and broken country with an average elevation above sea level of 1,000 to 1,500 feet, many peaks rising much higher. Northward the general level varies from 800 to 1,200 feet, and eastward there is a gradual slope from a height of 400 to 600 feet to the shores of the Gulf. For a description of the mountains east of the watershed the following is quoted from Mr. R. Chalmers' Report on this district.¹

"Bald (Sagamook) mountain, at Nictor lake, is 2,537 feet above sea level. . . . Numerous other mountains are to be seen in the vicinity of these lakes and along the upper reach of the Nipisiquit river, their bare red summits often rising 2,000 feet high. One of these, about three miles above Indian Falls, or fifty miles from the mouth of the Nipisiquit (also called Bald mountain), was found to be 1,922 feet above the level of the Bay Chaleur. From its summit, the Miramichi river and valley, and the Gulf of St. Lawrence were distinctly visible. On the portage, from Nipisiquit river to Upsalquitch lake, several remarkable mountains were noticed, among them a symmetrical, dome-shaped one, immediately southwest of the lake, stands up conspicuously in the valley, affording a splendid outlook from its summit. Its elevation, according to Hind, is 2,186 feet. Upsalquitch lake is surrounded by peaks, no fewer than ten being visible from its surface. Along the Tobique river, several ranges and isolated mountains also of great beauty were observed. Bald Head, on Riley brook, is one of the most striking; its elevation, according to Hind, being 2,240 feet above the sea. The Blue mountains form the most prominent feature of the Tobique valley, their highest peak being 1,724 feet above sea level and 1250 feet above the river at their base. The loftiest mountains in this elevated tract, however, occur, according to Mr. R. W. Ells and other explorers, on the big south branch of the Nipisiquit, that is between Nictor and Nipisiquit lakes on the north, and the right hand branch of the Tobique on the south, where some peaks attain a height of 2,600 to 2,700 feet above sea level."

Slate mountain and Squaw mountain, near the mouth of the Upsalquitch river, are about 2,000 feet, and Sugar Loaf at Campbellton, 950 feet above sea level.

The principal watershed of the province does not follow either of the high tracts mentioned, but extends from the Isthmus of Chignecto in the southeast to the western part of Restigouche county. This

¹ Preliminary Report on the Surface Geology of New Brunswick, 1855, pp. 11, 12.

watershed is a very irregular line. From the Isthmus of Chignecto it runs northwesterly, almost to the northern boundary of Kent county, separating the headwaters of the Kennebecasis, Canaan and Salmon rivers from those flowing into Northumberland strait. From this point it runs southwesterly, separating Salmon and Cains rivers. Then northwesterly in a zig-zag course dividing the waters of the Miramichi river from those flowing into the St. John river. This course continues into Carleton County where it is only about nine miles from the St. John river. The watershed then runs northeasterly between the Miramichi and Tobique waters into Northumberland County. It then curves round again to the southwest into Victoria and Madawaska counties where it is again only ten miles distant from the St. John river, which at this point is the western boundary of the province. The height of land then runs northwesterly into Quebec. This watershed or height of land is by no means a prominent and distinct ridge-through all its course, for in the southern half it is not easily distinguishable. The small streams forming the head-waters of many of the rivers interlock, and it is impossible in passing over the country to determine to which slope they belong without following them for some distance. This is true in a large degree of all watersheds except in mountainous regions. Another watershed of some importance runs through Charlotte and York counties and separates the rivers emptying into the Bay of Fundy from those flowing into the St. John. Its direction is northwest and southeast.

New Brunswick abounds in lakes, many of which are the sources of rivers and are so far from the common routes of travel that they are seldom visited except by the hunter and sportsman, while on the fertile shores of others are cultivated farms. . . . Grand Lake is by far the largest in the province. Its length is about twenty-four miles, and for the greater part it varies in width from three to six miles and covers an area of sixty-eight square miles. . . . Near the height of land separating the Tobique waters from those of the Miramichi and Nipisiquit, the highest lakes in the province are situated. The height given is above sea level. Gulquac, Tobique or Trousers, 1,360 feet; Long lake, 1370 feet; Serpentine, 1,450 feet. Then, twenty miles north, Nipisiquit, 996 feet; and Nictor, 878 feet.

The Saint John is the largest and most important river. It has a length of nearly 450 miles and drains an area in the province of 10,-

500 square miles. . . . For twelve miles above the Grand Falls the St. John river is deep, ranging from fifteen to thirty feet. The Grand Falls, like many of the lakes of the province, owes its origin to the Glacial period. The channel, in which the river formerly flowed, was filled with boulder clay, and so a natural dam was formed backing up the water for a long distance. The water then ran over the lowest point of its obstruction which happened to be the rocky cliffs. The solid rock has been worn away for three-quarters of a mile to a depth of 150 feet or more, forming what is known as the Gorge, through which the waters rush with tremendous force, the whole forming a scene which rivals the fall itself. Below Grand Falls the river valley is deep, the sloping banks rising to a height of 400 feet in places. Along these slopes are numerous gravel terraces rising one above another, forming a very noticeable feature of this part of the valley. . . . The river in its lower part forms a lake-like expansion, including the Long Reach, Grand Bay, etc. About four miles from its mouth it flows through the Narrows, where it has worn out a deep channel for itself. Opposite Indiantown it again opens out into a broad basin nearly a mile wide, but before it reaches the Bay its waters are forced through a gorge about 200 feet wide; a ledge of rock extends across this gorge, forming a dam, preventing the free passage of the water so that at low tide there is a fall outward and at high tide a fall inward, when the water rushes up with great force and a very swift current. On account of this obstruction, when it is high tide in St. John harbor, below the "Falls," the water at Indiantown, above the "Falls," is at least ten feet lower, and the tide continues to pour in for an hour or more after it is high water outside. It continues to flow upward till the tide has fallen nearly ten feet, the waters thus reaching a common level when the surface of the fall is calm and may be navigated with safety.¹

Another physical feature may be referred to. Along the east coast bordering the carboniferous sandstones, in many places, there are large banks or ridges of wind-blown sand; at some points these

¹ This "common level" occurs twice in every tide, about two hours before and two hours after high water, except in times of high spring freshets when high water in the harbor just reaches the level of the water in the river. For further description of the "Falls" see Nicholas Denys' "Description of the River St. John," edited by W. F. Ganong, No. 3 of this series.—EDITOR.

ridges reach a height of ten or fifteen feet and cover quite a large area, obstructing agricultural operations.

What are locally known as "horsebacks" form another prominent feature in many places. These are gravel ridges usually 300 or 400 feet wide at the base and rising from five or ten feet to seventy feet above the level of the country over which they pass. At the top they form a sharp ridge. They usually contain boulders and the gravel is water-worn, mixed with sand and more or less stratified. These ridges often extend for a distance of two or three miles and sometimes to a much greater distance; in other cases they are only a few hundred feet in length. They are frequently used as a roadway and serve this purpose admirably. One of the highest and longest in New Brunswick is found in York county, west of Eel river. It forms a tongue of land in the first Eel river lake and runs northward continuously for about eight miles where it turns off into the state of Maine. Another, a few miles east, is four or five miles long, and forms a good roadway as does the one from Eel lake. A third gravel ridge occurs along the south shore of Bay Chaleur, between Charlo river and Nash's creek, a distance of about fourteen miles.¹

¹I am indebted to the Reports of the Geological Survey for many of the facts here stated.

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