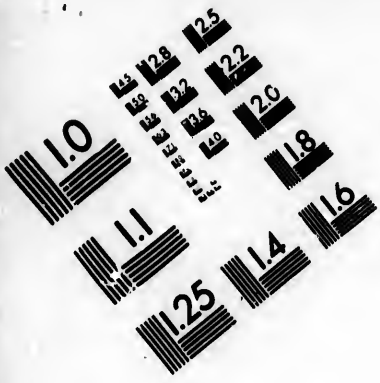

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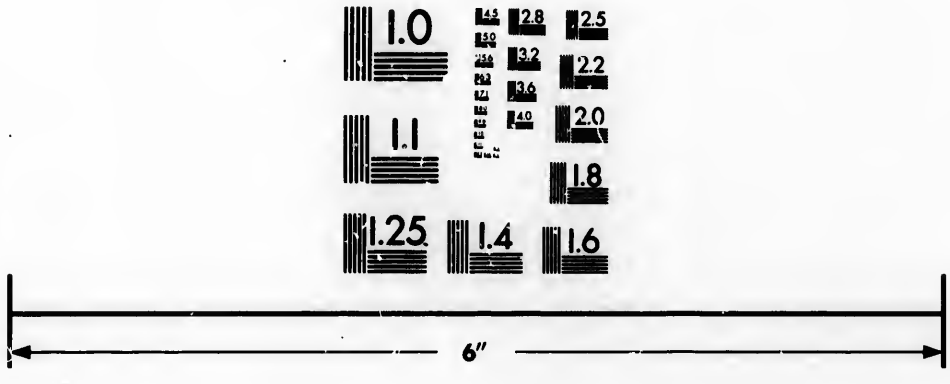

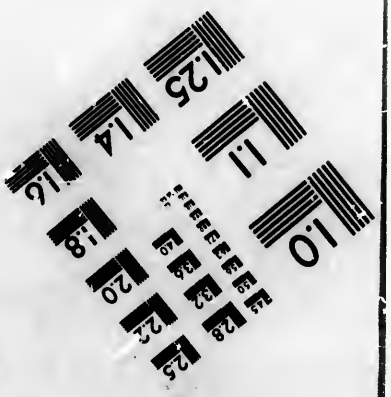

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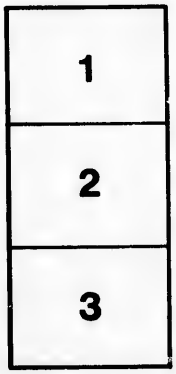

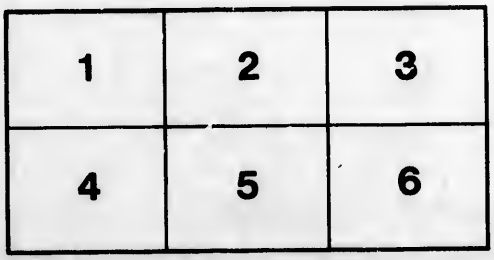

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REPORT

ON THE

EXPLORATION OF THE COUNTRY

BETWEEN

Lake Superior and the Red River Settlement,

AND

BETWEEN THE LATTER PLACE AND THE ASSINIBOINE AND SASKATCHEWAN.

BY S. J. DAWSON, ESQUIRE, C. E.

Printed by Order of the Legislative Assembly.

TORONTO:

JOHN LOVELL, PRINTER, CORNER OF YONGE AND MELINDA STREETS.

1859.

RETURN

To an Address from the Legislative Assembly to His Excellency the Governor General, dated the 23rd ult., praying His Excellency to cause to be laid before the House "copies of the Reports and Plans (subsequent to those already laid before the "House) of the Exploration of the country west of Lake Superior, conducted by S. "J. Dawson, Esq., C. E., and party, during the last two years."

By Command,

C. ALLEYN,
Secretary.

Secretary's Office,
Toronto, 16th March, 1859.

REPORTS.

Red River Settlement,
4th July, 1858.

Sir,—I beg leave to acknowledge the receipt of your letters of the 16th and 20th April, containing instructions for the guidance of the Expedition during the present season. These instructions it will be our endeavour to carry out to the satisfaction of the Government.

I have now the honor to inform you, that as soon as the exploratory surveys, in progress at the date of my last report, were completed, I set out on the excursion I had proposed by way of the Manitouba and Winnipegoos Lakes to the Saskatchewan River, and returned by the Assiniboine, reaching this place on the 29th ult.

On my arrival I found the men brought here by Professor Hind waiting for me,—the Professor himself having gone west to the Souris River, and in order that as little time as possible might be lost, I immediately dispatched two of my assistants with eleven men and two canoes to commence the work indicated in your instructions, retaining one canoe and five men until such time as I could collect provisions enough to prevent the necessity of sending immediately to Lake Superior, where Professor Hind had left the supplies, bringing here only enough for his own party. We have now obtained a sufficient supply and are about to set out.

As the time at my disposal will not admit of my reporting so fully as I could wish on the various surveys which have been accomplished since the date of my last report, I shall for the present confine myself to a brief account of our last expedition, and a description of the extensive region through which we travelled.

On the 10th of May, having provided ourselves with such supplies as the settlement could afford, we crossed over to Manitouba Lake. There we embarked in canoes, and had a very tedious passage against strong head winds to the northwest end of Winnipegoos Lake; from whence we crossed by the Mossy Portage to Lac Bourbon.

Leaving my assistants to measure the distance and ascertain the difference of level between the lakes just named, I descended the Saskatchewan to the Grand Rapid and examined it. Returning again to the Mossy Portage I divided the party —sending my Chief Assistant, Mr. Wells, back by the western coast of Winnipegoos Lake, Lac Dauphin and the little Saskatchewan, as detailed in his report which I send herewith, while with the other division of the party I ascended Swan River, crossed from thence to Fort Pelly and came down by the Assiniboine.

In order to be the better comprehended in describing the general appearance of the country, I enclose a rough sketch,* hastily compiled from our notes, to which I would respectfully refer you.

A range of high lands, it will be seen, extends south-eastward from the Pasquia Mountain on the Saskatchewan, in latitude 35° 30 North, to the United States boundary line. This range has in all probability, at some period, formed the south-western embankment of a great inland sea, which covered the valley of Red River, and comprised within its mass Lakes Winnipeg, Winnipegoos, Manitouba and the numerous smaller lakes which are spread over the great alluvial flat in which they lie. The country, bounded on one side by this range, and on the other by Lake Winnipeg, and the high lands to the eastward of Red River is an almost unbroken level, sloping very slightly to the Red River and Lake Winnipeg.

Part of this extensive tract is open prairie land, but by far the greater portion is densely wooded. A line drawn north 75° west from the confluence of Red River with Lake Winnipeg to Lac Dauphin would pass through about an equal extent of wood land and prairie. From thence northward, a forest but rarely broken by prairie openings extends to the Saskatchewan. To the south the country becomes more open, until, on nearing the Assiniboine, the woods entirely disappear, and an apparently boundless

* The sketch above referred to is embraced in the general map now being published.

prairie spreads out on every side. The streams, however, are all bordered more or less with wood; a heavy growth of oak, elm, basswood, &c., extends in many places for a mile or two from the banks of the Assiniboine.

Proceeding by the road from the Red River to Manitouba Lake, the country for the first twelve miles or so presents the appearance of an unbroken level with clumps of trees rising here and there like islands in an otherwise boundless ocean. Further on, the wood becomes more frequent, and sometimes the prospect seems bounded by forests; on approaching these, however, other prairies open up, and other woods appear, and in this way wood-land and prairie alternate all the way to Manitouba Lake; although the ground seems level it is not precisely so, but slightly rolling or undulating. The elevations are of every width, from half a mile upwards, and run in a direction from north-west to south-east; between them in most places the ground is more or less marshy and covered with low bushes and willows, or presenting ponds growing bulrushes and rank grass. The road is, however, sufficiently dry to be travelled by wheeled vehicles at all times during the summer season. Sometimes little stony ridges occur, marking what at one time has been the shore of a shallow lake.

At the terminus of the road on Manitouba there is a small settlement, and the settlers are of opinion that their land is superior even to the soil at Red River, while it is not, like it, subject to be overflowed. My own opinion is, that, as regards the soil, it is precisely of the same character.

The north-eastern shore of Manitouba Lake, the coast by which we passed, is low, and of a character so uniform that the same description will apply throughout. By the action of the water, or ice, or both combined, a high beach of shingle has been thrown up, consisting of water-worn fragments of limestone mixed with occasional boulders of granite. On the top of this ridge there is generally a dense growth of wood, while, between it and the main land, an open marsh, varying in width from half a mile to two miles, extends along the whole coast, broken only by occasional points of higher land, which run down to the Lake. When we passed, the marsh was covered with withered bulrushes and long grass, which, although of last year's growth, still evinced the rankness of the vegetation peculiar to this region. The stems of some of the bulrushes on being measured were found to be an inch and three quarters in diameter. From the marsh, the main land, a rich alluvial soil gradually rises to a moderate elevation, and is not subject to be inundated. The country bordering on the lower end of Winnipegoos Lake and the Singuissippi River, the stream which connects it with Manitouba, is of the same description; but about the middle of Winnipegoos Lake the land becomes slightly higher and the marshes disappear. The limestone rock then shows itself for a short distance, rising in horizontal strata to an elevation of 30 feet or so above the Lake. At the Mossy Portage a comparatively barren ridge separates the waters of Winnipegoos Lake from those of Lac Bourbon.

From the latter Lake to the Grand Rapid of the Saskatchewan the country has not a very inviting appearance. In many places the bare limestone rock appears on the surface, in others a thin coating of vegetable mould over it, scarcely supports a stunted growth of cypress, spruce and aspen. Some of the islands however, and there are many of them, appear to be fertile, especially at a little rapid just above Cross Lake. There the wood is of a large growth, and, although it was so early in the season (the 30th of May) when we passed that ice was still visible on the shores of Lac Bourbon, the foliage at these Islands was almost fully developed.

The Grand Rapid is about three miles in length, varying in width from 1800 feet at the head to about ¾ of a mile at the lower end. On the south side a perpendicular cliff of limestone rock rises abruptly from the water's edge and extends along the whole rapid. On the north side the banks rise precipitously, but present a face of rock only in certain places. For the first mile or so the water, confined in a channel so narrow for a river of such volume, rushes down with great impetuosity. The current then gradually moderates, and two miles farther on the Saskatchewan is lost in Lake Winnipeg. The total descent at the Grand Rapid may be safely estimated at upwards of 60 feet. Canoes and batteaux can easily be run down, and even towed up a part of the way. But, of course, in its present state, this rapid, with such a descent, must be regarded as forming an absolute break in the navigation, that is, to vessels of a considerable size.

Between the Grand Rapid and Lac Bourbon there are two little rapids which present obstructions of a less serious nature, but which could not yet be navigated in their present state by vessels of large size. From Lac Bourbon upwards, the navigation of the Saskatchewan is unimpeded for a long distance. On the 4th of June, having examined the Grand Rapid and ascertained the difference of level between Winnipegoos Lake and Lac Bourbon, I divided the party, as already explained, and crossed over to Swan River.

The country bordering on the western extremity of Winnipegoos Lake is, in general, of a fair elevation, and the land appears to be remarkably fertile; between Red Deer River and Swan River a level country extends to the base of the Porcupine Hills. It is well wooded, and upon the whole I should think this tract well adapted for settlement. Mineral springs occur in various places near the mouth of Swan River. One of these we visited, and found some people engaged in the manufacture of salt. At this place, in a bare flat of about 20 acres in extent, but slightly elevated above the level of the Lake, numerous springs bubble up, all of them emitting more or less gas. Some are exceedingly briny, while others taste exactly like the St. Leon water of Lower Canada, and on being drunk produce the same effect.

From Winnipegoos Lake to Swan Lake the distance is about six miles. The stream which connects them, here appropriately enough called Shoal River, varies in width from 150 to 300 feet. It is shallow and has a very swift course.

About Swan Lake the country is highly interesting. Numerous islands appear in the Lake: to the north an apparently level and well wooded country extends to the base of the Porcupine Range, while to the south the blue outline of the Duck Mountain is seen on the verge of the horizon.

Ascending from Swan Lake for two miles or so the banks of Swan River are rather low. In the succeeding ten miles they gradually become higher, until they attain a hight of nearly 100 feet above the river. The current is here remarkably swift, and the channel much embarrassed by round boulders of granite mixed with fragments of limestone, which latter is the rock proper to the country, although it does not crop out so far as we could see on any part of Swan River. Land-slips occur in many places where the banks are high, exposing an alluvial soil of great depth resting on drift clay or shale, of a slightly bituminous appearance.

About 30 miles above Swan Lake the prairie region fairly commences. There the river winds about in a fine valley, the banks of which rise to the height of 80 or 100 feet. Beyond these an apparently unbroken level extends on one side for a distance of 15 or 20 miles to the Porcupine Hills, and for an equal distance on the other, to the high table-land called the Duck Mountain. From this south-westward to Thunder Mountain the country is the finest I have ever seen in a state of nature. The prospect is bounded by the blue outline of the hills just named, while, in the plain, alternate wood and prairie present an appearance more pleasing than if either entirely prevailed.

On the 10th of June, the time at which we passed, the trees were in full foliage, and the prairie openings presented a vast expanse of green sward.

On approaching Thunder Mountain, which seems to be a connecting link between the Porcupine range and the Duck Mountain, the country becomes more uneven. Some of the ridges on the shoulder of the Thunder Mountain even show sand, but there are wide valleys between them.

On leaving Swan River to cross to Fort Pelly the land rises rapidly to a plateau elevated about 250 feet above the level of the stream. The road then follows for some distance a tributary of Swan River, which runs in a beautiful valley, with alternate slopes of wood land and prairie. Numbers of horses were quietly feeding on the rich pasture of this valley when we passed, and what with the clumps of trees on the rising grounds, and

the stream winding among green meadows, it seemed as if it wanted but the presence of human habitations to give it the appearance of a highly cultivated country. The Hudson's Bay Company keep a guard here to take care of the numerous horses attached to their establishment of Fort Pelly.

Arrived at Fort Pelly we spent the greater part of a day, the 16th of June, there to refit our canoe and prepare for the journey down the Assiniboine. And here I should mention, that we were much indebted to Mr. McDonald, the gentleman in charge of the establishment, who kindly furnished us with horses and carts to convey our canoes and articles across from Swan River to the Assiniboine, and was otherwise most attentive and obliging.

Leaving Fort Pelly early on the morning of the 17th of June, we proceeded on our journey. For 18 miles or so downward (from Fort Pelly,) the Assiniboine is very narrow, crooked, and much embarrassed by shoals and rapids. It is then joined by a stream appropriately named the White Mud River, which flows from the westward, and seems to be the main branch. This river drains a considerable portion of the great alluvial prairies which travellers pass on their way to Carlton House, and which have excited such general admiration on account of their great fertility.

From the White Mud River to Fort Ellice, a distance of about a hundred miles, the Assiniboine winds about in a deep valley, varying from a mile to two miles or so in width. At the White Mud River the banks of this valley rise only to a moderate elevation. Near Fort Ellice they attain a height of about 250 feet. On ascending these heights a view is obtained of a rolling prairie, stretching away on either side of the Assiniboine as far as the eye can reach. It would seem as if the whole of this vast region were a sort of level plateau, and that the greater height of the banks at Fort Ellice indicated the descent which the river had made in its course.

With regard to the quality of the soil; on going inland a little we found it to be of an alluvial character, differing in no respect from the soil in the prairie lands at Red River.

The smallest brook that flows from the prairie has cut itself a valley almost as deep as that of the Assiniboine itself; and from the latter stream a fine view is often obtained of glens stretching far inland, with winding banks, covered in some cases with green herbage, and in others with forests which ascend to the level of the plain above.

The course of the Assiniboine is remarkably crooked. Occasionally it crosses the valley as much as three times in a direct distance of one mile. The margin of the stream is in general wooded; sometimes the woods extend across the whole valley; in other cases the green banks slope down from the prairie level to the water's edge. Where the river runs close by some steep promontory, it occasionally happens that half the hill has slipped down, disclosing a face of yellow loam or drift clay, resting on crumbling slate or shale, which again is curiously interstratified with other substances as soft as itself, some of which shew the presence of iron ore. The immediate banks of the river are of soft alluvial earth, and are constantly tumbling in. As might be supposed, the water is muddy, and yet it is not unpleasant to the taste. Besides the White Mud River, two considerable tributaries join the Assiniboine from the west, above Fort Ellice. These are the Broken-arm and the Qu'appelle Rivers. The latter stream drains a great extent of alluvial prairie land; and at the Touchwood Hills, near its sources, it is said that coal is to be found in abundance.

From Fort Ellice to the Rapid River the country is much of the same character that I have described it as being above that place; but on passing the Rapid River a change is perceptible: the high banks of the valley disappear, and the prairie slopes more gently to the river. A little above the Souris River a still greater change occurs; the alluvial banks giving place to sand-hills, which run in ridges from north-west to south-east. Through these the river cuts its way in an extremely tortuous course, sometimes running south-east, in a direction parallel to the ridges; then cutting across a ridge, and suddenly turning in an opposite course. These ridges, where the river has cut through them, expose sand resting on stiff blue clay. In several places the limestone rock is seen beneath the clay in horizontal strata, full of organic remains, with sandstone resting on the top of it.

This comparatively barren tract may be about 40 or 50 miles in width. It is evidently a continuation of the high lands at the Duck Mountain, and here forms the south-western embankment of the great alluvial valley of Red River. But even this tract, which is the poorest to be met with in the country, is not all barren; for those who have travelled inland say that the valleys between the sand-hills are very fertile, and the whole tract would at least afford excellent pasturage.

Leaving the sand-hills the Assiniboine winds by the Grand Portage, where the venerable Archdeacon Corcoran has formed a settlement of half breeds and Indians. The soil here is of the same character as at Red River, and superior to it in so far that it is never subject to be overflowed. But with regard to this part of the country, it has been so often described, and it is so near the well known settlements at Red River, that I need not detain you by alluding further to it. I shall therefore only refer to the tracts which appear to me to be most valuable for settlement in the region I have visited, and then describe the manner in which I conceive they would be most easily rendered accessible.

By far the greater portion of the lands bordering on the Manitouba and Winnipegoos Lakes is unquestionably well adapted for settlement. Experience already shews that wheat yields an abundant return on Manitouba, and at the little Saskatchewan. At the latter place even Indian corn is said to be a sure crop. This being the case, it is reasonable to conclude that wheat would thrive also at Sanguissippi Lake, and at Lac Dauphin, and along the western coast of Winnipegoos Lake. The valley of Swan River, in point of fertility of soil, is perhaps unsurpassed in any country; and, as regards climate, it cannot, I think, be inferior to the valley of Red River, inasmuch as, if further north, it is also much further west, and removed from the influence of the cold winds of Lake Winnipeg, which sometimes have a prejudicial effect on the crops at Red River.

The country bordering on Red Deer River is said to be very fertile; and the fact that maple is to be found there in considerable quantities would confirm the belief that the climate cannot be very unfavorable. Throughout this region wood is in sufficient abundance to ensure a supply of fuel for a long time to come, or until such time as the coal mines may be developed.

It is said that coal is to be found in various places on the Porcupine Hills, and on the Duck Mountain. I found some specimens of lignite on going up Swan River, which fully confirm the fact, but whether it is to be found in available quantities can only be ascertained through time.

The great alluvial valley drained by the Assiniboine and its tributaries above the Souris River, will no doubt become, at some period, one of the finest wheat-growing countries in the world. No one in this part of the country even pretends that, in point of soil or climate, it is unfavorable to the growth of agricultural produce.

In regard to the means of communication that could be most easily made available, the country bordering on the lakes so often mentioned might be reached by steamers or other craft. There is nothing to prevent a steamer of light draft running from Red River Settlement to the end of Winnipegoos Lake.

On reference to Mr. Wells' Report, it will be seen that the Little Saskatchewan River is navigable from Lake Winnipeg to Manitouba Lake. The latter lake is not deep, but there are not many shoals to be met with, and the bottom is in general as level as the surrounding country. I sounded wherever I went, and found an uniform depth of from 15 to 18 feet, after passing a few hundred feet from the shore. The Winnipegoos Lake is on a higher level by about 5 feet than the Manitouba, and the sounding line showed that it was by so much deeper except at the upper end, where it attains the depth of from 36 to 50 feet.

The Sanguissippi River, which connects the Winnipegoos and the Manitouba Lakes, has a general depth of from 6 to 8 feet, except at one place, near the middle of its course, where there is a very swift run, with a depth scarcely amounting to 5 ft.

The distance from Winnipegoos Lake to Lac Bourbon, by the Mossy Portage, is 4 miles and 18 chains, and the difference of level 4 feet; the Winnipegoos being that much higher than Lac Bourbon. The Saskatchewan was, however, very low, at the time of our visit, and it is probable, that when it is at its usual height the difference of level between the two lakes is but very slight.

From Lac Bourbon upwards for 400 miles, the Saskatchewan presents an unbroken reach of navigable water. Above that, accounts differ as to whether it is navigable or not, some asserting that it is too much embarrassed by rapids and shoals, and others that it might be navigable for boats of light draught and great power to the base of the Rocky Mountains. From what I have learned, I incline to the latter opinion, but the truth can only be ascertained by examination. At all events, from the Red River Settlement to Carlton House, following Lake Winnipeg, the Little Saskatchewan, Lakes Winnepegoos and Manitouba, Lac Bourbon and the Great Saskatchewan River, there is a navigable reach of 800 miles, broken only by the Mossy Portage. This one carrying place cannot be reckoned a great impediment in such a distance; steamers might be placed on the waters on either side, and a land road made across it, and this, I conceive, would be all that could be desired until settlement should have advanced so far as to render a more perfect means of communication necessary.

From what I have said, it will be seen that the Lakes, and the country bordering on the Great Saskatchewan, are easy of access.

In regard to the facilities for communication in the valley of the Assiniboine, wheeled carriages can already be driven over the whole territory, by the lines of route indicated on the plan, and it is only by such conveyances that settlers will, in the first instance, be able to supply their wants. The Assiniboine is only navigable for considerable vessels as far up as the Grand Portage; above that, indeed, canoes can be towed up, and batteaux can descend, except at extreme low water, but it has a very tortuous and rapid course, more especially among the sand hills, and it is in many places shallow, so that it could only be made navigable for vessels of any size at a great outlay. Everything considered, therefore, I am of opinion that transport could be more easily effected by land. The country is admirably adapted for railroads, but of course in an unsettled region these are out of the question.

On reference to the map, it will be seen that Lac Dauphin and a part of Winnipegoos Lake approach within 70 or 75 miles of the Assiniboine. These places being accessible to steamers, land roads might be made across the country, which would afford all the accommodation required by a settlement in its first stage; indeed so obvious is this way of reaching the Assiniboine, that the Hudson's Bay Company supply their establishment at Fort Pelly by way of these lakes and Swan River, carting their goods from the latter place across the country to the Assiniboine.

In speaking of navigable lines that might be made available, I should mention that at the Grand Portage, there is said to be an old water-course, by which the Assiniboine in all probability has at some period discharged its waters into the Manitouba Lake. Now, as the Assiniboine is navigable, or in a state that it might easily be made so, as far as the Grand Portage, it may yet be found advantageous to open a water communication between it and the Manitouba Lake. The advantages which this route would possess over that by Lake Winnipeg and the Little Saskatchewan, are, that it would be considerably shorter, and would be open somewhat earlier in the Spring.

In considering the project of colonizing a country so remote as this, and of which so little is, as yet, generally known, the question will naturally arise as to whether the native population would be likely to offer any opposition to settlement, or whether the country, if occupied, would be easily governed. Believing that any information which will enable the Government to judge of these important matters will be acceptable, I shall, before concluding, describe the present state of the country through which we passed, confining myself to what has come under my own observation.

At Manitouba, Lac Dauphin, and "Partridge Crop," there are small settlements of Indians and people of mixed origin. At the first and last named settlements, the people are rather industrious, and raise wheat, Indian corn, and a variety of articles. At Lac Dauphin the settlers simply grow potatoes and Indian corn. They are gradually acquiring habits of industry, but they can live so easily by fishing or hunting, as Mr. Wells says in his report, that they are slow to adopt the more laborious pursuits of civilized life. Ducks, geese, and aquatic fowl of all sorts frequent the waters in that quarter, in great numbers, and the lakes and rivers literally swarm with fish.

Near the Grand Rapid of the Saskatchewan, we saw about 15 families of Indians, from Swan River, who migrate there annually to catch sturgeon. They seemed to me to be a very quiet and orderly people, and I thought I could detect in their countenances that they were not wholly of Indian origin; and on enquiring as to this point, some of them were proud to boast of their descent from the Canadian Fur-traders who had occupied this country many years ago. At the upper end of Winnipegoos Lake, we only saw one family, (those already mentioned as being engaged in making salt,) and from thence in a journey of five hundred miles by the valleys of Swan River and the Assiniboine, we saw not a living being, except the few people in charge of the Hudson's Bay Company's establishments of Fort Pelly and Fort Ellice, until we got to the settlements in this neighborhood. At Fort Ellice we were told that the hunters were gone further west; but from all we could see or learn, there was no avoiding the conclusion that the population which once wandered over the vast plains of the Assiniboine had decreased to an unexampled extent. This I attribute partly to the indiscriminate slaughter of the Buffalo to supply the pemican required for the trade of the country, the introduction of horses having rendered these clumsy animals an easy prey to the hunter. And the Indian, so that he can supply his immediate wants in a profusion however boundless, never troubles himself about the future. Numerous, therefore, as the buffalo still are, there can be little doubt but that they will soon be destroyed.

Large supplies of pemican used to be obtained at Fort Pelly and Fort Ellice, but these establishments can furnish little now. At many places we observed the plains furrowed with old tracks of the buffalo, and in some cases the banks of the Assiniboine were strewn with their bones, but there were none of these animals, we were informed, to be seen within several days' journey of any place we were at. This shews how fast they are being destroyed, and it leaves but the reflection, that as their staple article of food diminishes, the Indians must decrease in numbers, unless they can be induced to adopt the habits of civilised life. That with proper management they may be so, is fully shewn by the success which has attended the labors of the zealous Missionaries at the Grand Portage, Red River, "Partridge Crop" and elsewhere. As to the people of the Red River Settlement, they are as orderly and quiet a community, I may safely say, as can be met with any where, and I believe there is nothing they desire more than to see the country opened up.

In leaving this part of the country I have much pleasure in saying that both from the people of this settlement, and the officers of the Hon. Hudson's Bay Company, we have met with every kindness and civility. It may appear invidious to mention names; and yet I cannot omit those of Chief Factor McTavish at Fort Garry, who furnished us with many articles which we could not otherwise have obtained; and of Chief Trader Murray at Pembina, who always had his hospitable quarters open for any of the party that passed his way.

I have the honor to be, Sir,
Your most obedient servant,
S. J. DAWSON.
C. E. in charge Red River Expedition.

The Hon. Provincial Secretary,
Toronto, C. W.

P. S.—Both Mr. Wells and I made a cursory survey, taking the courses and correcting the distances by numerous observa-

tions as we proceeded, and I have left a letter for Professor Hind informing him of our operations.

S. J. D.

RED RIVER SETTLEMENT,
30th June, 1858.

SIR,—After leaving the Mossy Portage on the morning of the 4th of June, I proceeded agreeably to your instructions to make a cursory survey of the west shore of Lake Winnipegoos, the River Dauphin, and the Lake of that name, the Little Saskatchewan, and the Southern part of Lake Winnipeg, and would beg leave to submit the following report of my operations:

The western shore of Lake Winnipegoos, in common with the other Lakes through which I passed, is much better adapted for settlement than the eastern one, inasmuch as the land is higher, and the climate, if any thing, a little better. In crossing Lake Winnipegoos from east to west, a distance of only about twelve miles, I found vegetation somewhat further advanced than on the side I had just left; the soil is also better, inasmuch as that it is higher. Timber, such as maple, elm, oak and poplar, covers the country to the water's edge. I visited several places where sugar had been made, and saw specimens of that article equal to any that I have ever seen in Eastern Canada.

The Duck Mountain, which occupies almost the entire background, commences to rise not far from the Lake shore, keeping a gentle ascent for 15 or 20 miles back, where it attains its greatest elevation, a height of 600 or 700 feet above the Lake. I learned from the people who reside in Duck Bay, that the entire face of the Mountain is a succession of gentle slopes and flat table lands, and that the summit itself is an extensive plateau of alluvial soil covered with a fine growth of timber.

There are three salt springs near the southern end of Lake Winnipegoos, one of which I visited, where there are works established for the manufacture of salt.

There are some 40 or 50 half-breed Indians who reside here, and at the Duck Bay, and though assured by them that all kinds of grain succeed well, yet they cultivate only a few potatoes, as fish and game are so plentiful and of such good quality, that they may be said to live almost without exertion.

From the salt springs I passed through the Dauphin River, almost 16 miles, to Dauphin Lake. The Dauphin River is a fine stream about 40 yards broad, and having 5 feet of water in the shallowest places. Its banks are of a strong grey clay, covered with black mould, and timbered with oak, elm and poplar. It has two considerable tributaries rising in the Duck and Riding Mountains, which appear to drain a country well adapted for settlement. There are several places on the Dauphin River where the Indians grow potatoes, Indian corn and melons. The wild grape, wild hop and wild vetch, are also common on the banks of the river.

Lac Dauphin is about 30 miles long from north-west to south-east, and six miles broad. Its western shore is bounded by the Riding Mountain, similar in all respects to the Duck Mountain already mentioned. Its southern shore is bounded by a prairie interspersed with wooded knolls, which I was informed extended without interruption south-east to the Assiniboine and Red Rivers.

I saw fixed rock only in two places in this part of the country, namely, at Snake Island, near the lower end of Lake Winnipegoos, and at the lower part of the Dauphin River. That on the Snake Island, a whitish limestone, is full of organic remains; the other is similar to the Manitouba limestone and nearly without organic remains.

From Lac Dauphin I returned by the north-east end of Lake Mamitouba and its discharge, the Little Saskatchewan River.

The Little Saskatchewan, as its name implies, has a very strong current, which I found, on measuring to be 2½ and 3 miles per hour, *but it is entirely free from rapids.* Its average breadth is 250 yards, with from 8 to 12 feet of water. It appears well adapted for steamboat navigation.

The country in the vicinity of the Little Saskatchewan presents every inducement for settlement, as is proved by the flourishing state of the present settlement at Fairford, or, as it is more generally called, "Partridge Crop,"—a mission established under the Bishop of Rupert's Land, about six years ago, by the Rev. Mr. Cowley.

The present establishment is some six miles higher up the river than the first one, which, being subject to inundation in times of high water, was abandoned. There are several well built houses, a chapel, school and mill, at this place, with a population of about 200 souls, Indians and half-breeds.

The Rev. Mr. Stag, the missionary now in charge, informed me that the school which is attached to the mission was usually attended by from 50 to 60 children, half of whom are Indian children; indeed, the Indians belonging to this place appear to be fast acquiring the tastes and habits of civilization, being more clean and better dressed than any I have seen in the country. Mr. Stag also informed me that, notwithstanding the ease with which the ground was cultivated, and the large returns of grain, he required to use all his influence to induce the Indians to cultivate the land, as their wants are so easily supplied by fishing and hunting.

From the Little Saskatchewan I returned through Lake Winnipeg, arriving at this place on the 26th of June.

The journey through Lake Winnipeg presented no feature of essential difference from the other lakes, except that the western shore is low, with occasional limestone cliffs, and the eastern shore high, with granite rock.

I am, Sir,
Your obedient servant,
A. W. WELLS.

S. J. Dawson, Esq.,
Red River Settlement.

FORT WILLIAM, LAKE SUPERIOR,
21st August, 1858.

SIR,—In my report of the 4th ultimo from Red River, I had the satisfaction to acknowledge the receipt of your letters of the 16th and 20th of April, since which time I am without any further communication from the Government.

I have now the honor to inform you that the party under my directions are at present actively occupied in the exploration of the country between Rainy Lake and Lake Superior; one of my assistants, well appointed with men and supplies, being at Lac des Mille Lacs, and another, equally well provided, at Dog Lake. For my own part, since reaching this place, I have been occupied in sending the necessary supplies to the different points where they will be required, and having accomplished this, I am now about to set out for Lac des Mille Lacs.

In regard to the progress which has been made in the brief period that has elapsed since we left Red River, as explained in my last report, immediately on my return from the Saskatchewan I despatched two of my assistants with most of the men to commence the operations indicated in the instructions which I had just then received, while I remained for a few days to collect what supplies the settlement could afford.

The party so despatched made all haste to the Lake of the Woods, from whence, proceeding to Rainy River, they ascended that stream more slowly, making traverses back into the country at intervals of a few miles so as to ascertain the extent of arable land on the British side. They then examined the country at the mouth of the River Seine, the stream by which Lac des Mille Lacs discharges its waters into Rainy Lake, and thence went to Nequaquon Lake, which, previous to their leaving Red River, I had appointed as the place of rendezvous, and there I joined them on the second day after their arrival.

At Nequaquon Lake the route from the Kamini-taquia joins the route from the Grand Portage, and from this place it was my intention to have despatched a party at once to Lac des Mille Lacs. Finding, however, that we had made too great an inroad on the stock of provisions which we had been able to procure at Red River to render it quite safe to send them into such a wilderness, I hurried on to the Grand Portage, leaving a

sufficient party to follow more leisurely and take the levels and measurements as they came. At the Grand Portage I purchased the requisite supplies at a small fur-trading establishment, and immediately despatched my chief assistant, Mr. Wells, to Lac des Mille Lacs and Rainy Lake.

As soon as the remainder of the party had completed the survey of the route by the Grand Portage, they came down here, when I at once despatched them to Dog Lake. They will now be employed in running lines and making traverses between the Kaministaquia, Thunder Bay, and Dog Lake, so as to ascertain the route most practicable for a road. They will also examine the country between Pointe de Meuron and Gunflint Lake.

From what I have said it will be seen that our surveys, so far as they have gone since we left Red River, enable me only to speak of the land available for settlement in the Rainy River country, and of the respective merits of the canoe routes by the Kaministaquia and Pigeon River.

With regard to the former of these subjects, the land immediately bordering on Rainy River, on the British side, is of an alluvial description, and almost as uniformly level as the prairies at Red River. For a mile or so inland from the main stream the ground is dry, and a dense growth of large timber, consisting of poplar, elm, oak, basswood and occasional white pines indicates a productive soil. For a mile or two beyond this, however, swampy ground predominates, while beyond that again the land gradually rises to a range of hills of no great eminence, which, as far as we could observe, seemed to run parallel to the river, at a distance of from four to eight miles back. The distance from Rainy Lake to the Lake of the Woods, following the windings of the stream, is about eighty miles, and throughout the whole of this extent the land fronting on the the river is fit for settlement, without I may say a single break; indeed, I have never seen any thing to equal it in my experience, except at Swan River, and on the Assiniboine. Farther inland, although the ground becomes in many places swampy and broken, there must be a fair proportion also fit for settlement, but to ascertain anything like the precise area that is so, would require a closer examination than we have as yet been able to bestow.

Passing from Rainy River to the Lake of the Woods, there is, around that extensive sheet of water, a coast line within the British territory, of more than three hundred miles. Taking the whole of this distance there is unquestionably a great deal of barren land, but there is also much that is fit for settlement; in some places high rocks line the shore, and indicate too surely the character of the country inland, but in others, there are gentle slopes where the growth of timber would argue a soil of great fertility, and, added to this, there are numerous islands in the Lake which, although many of them are comparatively barren, are in some instances well adapted for settlement, both from their situation and the extent of arable land they contain.

With regard to the extent of land fit for settlement about Rainy Lake, the surveys which we are now carrying on will afford us frequent opportunities of seeing that country, and as soon as I have made a further examination and obtained more precise information, I shall lose no time in reporting to the Government. In the meantime, I may safely say that a considerable extent of land available for settlement will be found in that country.

In reference to the comparative advantages of the two canoe routes which leave Lake Superior, the one at Fort William and the other at the Grand Portage Bay, and meet at Nequaquon Lake, I am only yet in a position to say that, regarded as canoe routes, that by Fort William and the Kaministaquia, although a little the longest, is incomparably the best.

The route by the Grand Portage and Pigeon River, passes through a country of greater elevation, and withal more rugged and mountainous than that by the Kaministaquia and the Lac des Mille Lacs.

The highest water level on the Grand Portage route is at an elevation of no less than 1053 feet above Lake Superior, while around the Lakes at this great altitude the mountains tower up to the height of at least five hundred feet.

The highest water level on the Kaministaquia route is that of the little pond at the west end of the Prairie Portage, which is 893 feet above Lake Superior, while at that elevation on this route the country is comparatively level.

The number of portages on the Grand Portage route, between Lake Superior and Lake Nequaquon, is 31, and their aggregate length 15 miles and 52 chains.

On the Kaministaquia route between the same points, the number of portages is but 20, and their aggregate length only 10 miles and 77 chains.

The Grand Portage route has, moreover, the disadvantage of touching on the head waters of four different rivers, viz., Pigeon River, Arrow River, Sageinaga River, which discharges its waters into the Upper Sturgeon Lake, and the stream which flows from White Wood Lake to Lake Nequaquon. For 90 miles between Fowl Portage and White Wood Lake, the route lies along the head waters of these rivers, and in that distance the streams between the lakes are so shallow and small as to be scarcely navigable for birch canoes, so that, in the event of a more perfect water communication becoming necessary, the means of supplying it could not be looked for in a region so elevated.

That as a canoe route the Kaministaquia and Mille Lacs way is the best is pretty conclusively proved by the fact, that it is the one which was eventually adopted by the North-west Company, and always followed by the Hudson's Bay Company. However, I shall be better prepared to report on this subject when the surveys now in progress are completed.

With respect to the carrying on of the surveys, they will, I am confident, advance rapidly under the present arrangements. There is, however, a wide extent of country to examine; and when the most advantageous route is discovered, instead of mere cursory surveys such as we have hitherto been making, the measurements and levels will have to be taken with great precaution, so that estimates can be founded on them afterwards. I think, therefore, that to complete the whole properly, the surveys should be continued during the winter; and, if the Government should decide on doing so, a great saving will be effected in sending supplies by canoe to certain points along the route before the close of the navigation, so that the surveying parties may continue uninterruptedly at work. I therefore send down the bearer, Mr. Charles de Salaberry, who will bring up such supplies as will be required; that is, in the event of the Government deciding to continue the surveys during the winter.

Before concluding this report, I should mention that our operations excite the greatest interest among the Indians, especially at Fort Frances and the Lake of the Woods, where they are very numerous. On coming up I found the principal chiefs waiting for me at various places; but the most important interview I had with them was at Fort Frances. The chiefs at that place guide and rule, more or less, the whole Saulteaux tribe; and feeling the importance of keeping on good terms with them, I went to a Grand Council to which they invited me on the moment of my arrival. After their preliminary ceremonies had been gone through with, the principal chief delivered a long harangue, with which I need not trouble you further than to say, that the point he aimed at was to ascertain what object the Government had in view in causing the country to be explored. I replied that I could not say what course might be ultimately adopted by the Government; that they need not fear, however, but that their interests would be consulted; and that we were merely examining the country, to our doing which we trusted they would offer no opposition. I then made them some presents which I had taken with me for the purpose, and said I would wait until the next day to hear what further they had to say.

On the following morning they called on me, and said they would not put me to the trouble of attending another council; that they had consulted among themselves, and come to the conclusion to allow us, in the meantime, to explore the country as we pleased; but that they trusted no settlers would be sent in without their being consulted; and concluded by requesting me to inform the Great Chief of the Canadians that they and their people would assemble at Fort Frances early in June next year,

when, if he would send a person duly authorised to confer with them, he would not find the Indians unreasonable, as they wished to be friends with the Canadians.

I promised to convey their message to the Government, and then parted with them on the most friendly terms. Mr. Chatelain, the Hudson's Bay Company's Officer in charge at Fort Frances, kindly acted as interpreter, and he informed me that, about ten days previous to our arrival, no less than five hundred Indians had been waiting for me; but that they had been compelled to disperse on account of the scarcity of provisions. When we arrived I only saw the chiefs, and about twenty others.

The bearer, Mr. de Salaberry, has been very active, and of great assistance to me, especially in pushing on the men when *en route* with the canoes; and I therefore recommend him with much pleasure to your favorable notice.

I have the honor to be, Sir,

Your most obedient servant,

S. J. DAWSON, C. E.

To the Honorable Provincial Secretary,
Toronto, C. W.

FORT WILLIAM, LAKE SUPERIOR,
23rd September, 1858.

SIR,—I have the honor to inform you that for the last few weeks I have been engaged in exploring and making a cursory survey of the River Seine, the stream by which Lac des Mille Lacs discharges its waters into Rainy Lake. From this excursion I have only just returned; and as the mail boat is hourly expected, there is barely time to enter into a very minute description of the country, or prepare a map, without which a detailed statement would not be sufficiently intelligible. I shall therefore for the present confine myself to a very brief account of our recent operations, and the advantages which the River Seine presents as a line of communication.

Where that stream issues from Lac des Mille Lacs it is a fine river, over a hundred feet in width. For a considerable part of its course it winds about, with a general westward direction, through a flat, thickly wooded with cypress trees and poplar of a large size; while beyond this, on either side, low hills swell up gradually, covered for the most part with a dense growth of popar, interspersed here and there with tall pines, which rise singly or in groves above the surrounding forest.

At times the valley contracts, and where it does so the river presents cascades past which a portage has to be made, or little rapids which can be run with a canoe; but between these there is generally a considerable extent of navigable water. This description will apply to the country for about forty miles below Lac des Mille Lacs. The lower part of the valley presents a succession of lakes, varying from a mile to fifteen miles in length, until near Rainy Lake, into which the river, much increased in volume, discharges itself in a series of cascades, making a plunge of over 112 feet in the distance of five miles and a half. The lakes just referred to are bounded, for the most part, by low hills, generally wooded, but in some cases rocky, with an occasional valley between them presenting a less barren appearance.

The rock throughout is, I may say, entirely of the primitive formation,—that is, where we had an opportunity of observing it. In one of the lakes an island rises like the peak of a half submerged mountain, exhibiting a description of rock somewhat different from that of the surrounding country; and here we found some specimens indicating the presence of copper.

Viewed in its general aspect, the valley of the Seine is far less rugged in its character than the country bordering on either of the other two routes which have as yet been followed to Rainy Lake. On the borders of the lakes of which I have just spoken, it is certainly somewhat rough, but not so much so, by any means, as to be impracticable for roads; and, should it ever be determined on to construct a railway from Lake Superior to Rainy Lake, from what I have as yet ascertained of the general features of the country, I am convinced that it must pass through the valley of the Seine.

Regarded as a navigable route, this river is susceptible of being made far superior to either of the other lines at present used.

The main objection to these latter is that they follow no continuous river system but pass over dividing ridges from the waters of one stream to those of another, and consequently, however much improved, can only afford at best a broken sort of communication. The Seine, on the contrary, with the Mille Lacs from whence it issues, and the Savanne River, its tributary, presents great facilities for making the water communication continuous, by means of lock and dam, from the Height of Land to Rainy Lake.

Regarding it in the meantime, however, merely as a canoe route, it is but very little inferior, even in its present state, to either of the other routes; the only formidable barrier to canoe navigation being the series of falls which I have already mentioned as occurring in the immediate vicinity of Rainy Lake. At low water these falls are passed by twelve short portages, but at high water it would perhaps be necessary to make a portage of five miles and a half to avoid them. It is doubtless on account of the obstacles which occur at these falls that this river has not been followed as the highway for canoes, for between them and Lac des Mille Lacs the carrying places, although there are as many as fifteen of them, do not equal the French Portage alone in their aggregate length.

On reference to the lithographed map accompanying the blue book containing the reports of the different members of the expedition, it will be seen that the discharge of Lac des Mille Lacs is marked as supposed to enter a deep bay on the north side of Rainy Lake. We have ascertained, however, that it does not enter that bay, but the first one to the eastward of it, from whence a reach of navigable water, which may properly be considered as an arm of Rainy Lake, extends, on the magnetic course North 70° East, for twenty miles further than the map indicates; and into the head of this arm the River Seine discharges itself.

Until we have had leisure to prepare plans, however, I need not refer further to this river than to say that, at a very moderate outlay, it might be made an excellent route for canoes, or boats such as the Hudson's Bay Company use. A road, say six miles in length, might be made past the impediments near Rainy Lake, and by the construction of dams the portages above that place might be reduced to one-third of their present number; and this it is important to consider, would be a step towards works of a more comprehensive nature.

With regard to the operations being carried on at present, I dispatched my principal assistant, Mr. Wells, from Mille Lacs, to make a cursory survey of a tributary of the River Seine, which takes its rise a little to the northward of the Prairie Portage, and—after a westerly course of over sixty-five miles, without a break, as the Indians report, in the navigation—joins the River Seine, about twelve miles below Lac des Mille Lacs; from thence he will descend to Rainy Lake, ascend the River Maligne to the Upper Sturgeon Lake, and then make a cursory survey of the Sageinaga River and Lake.

The small party employed in this quarter have already completed two exploratory lines, one from Pointe de Meuron, and one from Current River to Dog Lake. The mountain range bordering on Lake Superior is the main barrier to a line of road. The line just run from Pointe de Meuron is very rough; that from Current River is better; but I am in hopes of finding still better ground between the bottom of Thunder Bay and Dog Lake, and in order to ascertain this point, I have sent a party to run an exploratory line through. When this work is completed, we shall examine the country between the Kaministiquia and Gun Flint Lake.

In my report of the 21st ultimo, I had the honor to suggest the expediency of establishing a party to continue the surveys during winter. To be more explicit, however, I would propose leaving one of my assistants and six men at Lac des Mille Lacs,

to make a trigonometrical survey of the River Seine, the Savanne River, and Dog River and Lake, taking the levels throughout with the greatest precaution. Densely wooded as the entire region is, an instrumental survey can be much better accomplished in winter, when the lakes and rivers are frozen over, than it can in summer. I would also leave one of my assistants in charge of the instruments and stores at this place, with instructions to keep a meteorological register, and, when opportunity offered, to prosecute still further the surveys between this and Dog Lake on the one hand, and Sageinaga Lake on the other. This arranged, I should go down late in the fall, with my principal assistant, Mr. Wells, to make up plans, &c., of the exploratory surveys now accomplished, where we would have conveniencies for work of that kind, which cannot be obtained here, and return to this place in the month of March, or immediately on the opening of the navigation.

The surveys now extend over four and a half degrees of latitude, and about thirteen degrees of longitude, so that we have a considerable amount of work to put together.

Mr. De Salaberry, who took down my last despatches, by some mischance lost a trip of the boat, so that he cannot now return so soon as I had reason to anticipate, and, as the season for canoe navigation is drawing to a close, I have in the meantime sent some provisions to the Savanne River, and Mille Lacs, so that we may be fully prepared, in the event of surveys being continued during winter. Should they not be so, the provisions will be in a convenient situation for next spring's use—all the additional expense involved being the cost of maintaining a man where they are kept, to take care of them.

I have the honor to be, Sir,

Your most obedient,

S. J. DAWSON,
C. E. in charge Red River Expedition.

To the Honorable
The Provincial Secretary,
Toronto, C. W.

GENERAL REPORT

ON THE

PROGRESS

OF THE

RED RIVER EXPEDITION.

GENERAL REPORT.

Toronto, 22nd February, 1859.

Sir,—I have the honor to submit to your notice, for the information of the Government, a report in reference to the exploratory surveys which have been carried on under my direction, between Lake Superior and the Saskatchewan River, together with the following maps, illustrative of the topography of the region explored:

1. A general map, on a scale of 10 miles to 1 inch.

2. A plan shewing the newly explored River Seine, and the various canoe routes between Lake Superior and Rainy Lake, on a scale of 2 miles to 1 inch.

3. A plan, in profile, shewing the relative altitude and length of the routes by Pigeon River and the Kaministiquia.

4. A map of a portion of British North America, shewing the route which it is believed could be most easily made available through Canada and British Columbia.

5. A sketch shewing the surveys accomplished by Mr. J. F. Gaudet, at the Savanne River, &c., up to 23rd December, 1858.

6. A sketch shewing the surveys made by Mr. L. A. Russell, between Thunder Bay and Dog Lake, up to 10th January last.

On returning from the Saskatchewan and Assiniboine, I brought with me such specimens of fossils, shale, coal, &c., as I thought would best illustrate the geological formation of the country. These I submitted to Sir Wm. Logan, the Provincial Geologist, and to E. Billings, Esq., Palæontologist, his principal assistant.

Mr. Billings has kindly favored me with an article, which I have much pleasure in inserting, and to which, coming as it does from such high authority, I would invite particular attention. In respect to some of the fossils, it will be observed he has obtained the valuable opinions of Professor Dawson, of McGill College, and Messrs. Meek & Hayden, of Washington, who are considered the highest authorities in America on all points relating to the secondary and tertiary formations of the central portion of the continent.

Mr. Russell, of Ottawa, who has made the subject of colonization his particular study, and who has had a great deal of experience in opening up new counties, has favored me with his opinions in respect to the advantage of settling in a prairie region, as compared with a country entirely wooded; and his remarks I am convinced, will be read with much interest.

As I write, despatches have come in from the party engaged in exploring the country between Lake Superior and Rainy Lake, and I have much satisfaction in saying that the surveys have been progressing as rapidly as could have been expected, as will be seen on reference to the annexed reports from Messrs. Gaudet and Russell.

I have the honor to be, Sir,
Your most obedient servant,
S. J. DAWSON,
C.E. in charge of Red River Expedition.

Hon. Charles Alleyn, M.P.P.,
Provincial Secretary, &c.,
Toronto, C. W.

REMARKS ON THE PROGRESS OF THE EXPEDITION.

The first exploratory excursions of the various parties composing the Red River expedition having been dwelt upon at ample length in the Blue Book containing their correspondence and reports, I shall for the sake of brevity, confine myself, in this report, to an account of the operations of the party under my immediate direction, when the expedition consisted of several distinct divisions, and the progress which has been made since I have had the full charge.

Before proceeding further, however, I may mention that I was prevented from reaching Red River at the same time as the other parties, by an attack of typhus, which compelled me to remain for some time at a remote missionary establishment on the River Winnipeg. So infectious was the disease, and of a type so virulent, that four out of eight individuals who were in my canoe were attacked and suffered severely from it. I and one of the men found shelter with the Rev. Robert McDonald, who, strangers as we were to him, did all for us that kindness could prompt or intelligence suggest; and, on our getting a little better, perceiving my anxiety to rejoin my party, he prepared his canoe, and accompanied me all the way to Red River—the man who had been with me having left a few days previously for home.

Mr. McDonald is a clergyman of the Episcopal Church, in connexion with the Church Missionary Society; and I may here mention an incident of the journey, which, as it is illustrative of a practice common with all the missionaries when travelling in that remote region, will serve, in some measure, to shew the beneficial influence which their presence is producing among the native population.

Every evening as we proceeded down the Winnipeg, as soon as the necessary preparations had been made for passing the night, the whole party, including his people and mine, in number seventeen, and, with three exceptions, all either pure Indians or partly of Indian origin, was assembled, when prayers were read and appropriate hymns sung. The Indians all joined, and, as the night closed in, it had a strange effect in that unbroken wilderness, to hear the anthem rising above the din of the rushing torrent, and to see the children of the forest bent in prayer, where so lately they had been accustomed to invocations of another kind, in the practice of their strange observances; and one could not but reflect on the great moral change which was thus—slowly, perhaps, but surely—being effected by the efforts of those disinterested men, who, leaving home and the attractions of civilization behind them, are content to seek out the savage, and instruct him in his native wilderness.

Mr. McDonald's station, at Islington, on the Winnipeg, is a most important one. The Indians from Lac Seul, on the English River, and from Rat Portage and the Lake of the Woods, sometimes assemble there, more especially when they go to collect the wild rice, which is abundant in the neighbourhood.

They are a somewhat stubborn race, however, and he has, as yet, only a congregation of fifty or sixty, but his establishment is not without its influence on the far greater number who have not embraced Christianity. It is impossible that even these untutored savages can contemplate with indifference the efforts of a man who seeks them out in distress, ministers to them in illness, and does all in his power to relieve their necessities; and thus I had an opportunity of observing, for,

when I was there, the Chiefs came to see him as they passed, and it was not difficult to perceive the reverence and respect with which they all regarded him.

On reaching Red River Settlement, which I did on the 9th October, 1857, I found that no adequate provision had been made for carrying on the necessary operations during the winter, the supply of pemican and flour being only equal to the support of the smallest number of men that could be advantageously employed for about three months, but, with the exception of a blanket each in the possession of the officers, we had no camping equipage of any kind whatever. In this emergency I applied to Mr. McDermot, a merchant in the settlement, who obtained us credit at the Hudson's Bay Company's establishment and elsewhere, and was thus enabled to fit out a working party in the course of a fortnight, and commence the exploration of the country between Red River and the Lake of the Woods.

Subsequently, on considering to what we would be exposed should our credit fail, and our resources become entirely exhausted, Mr. Napier, who was in command of another branch of the expedition, and I determined on sending an express to Canada. Mr. C. de Salaberry was chosen for this service, and despatched on the 18th of December. He returned on the 5rd of March following, and, after his arrival, our power to obtain what we required was limited only by the capacity of the settlement to furnish it.

The explorations accomplished during the winter, and early in the spring, embrace the region between the Lake of the Woods and Red River; the Roseau River, of which a cursory survey was made; the Red River, which was subjected to an instrumental survey between Pembina and Fort Garry, and between the Stone Fort and Lake Winnipeg; a like survey having been made, also, of the coast of Lake Winnipeg, between the mouth of Red River and Fort Alexander.

My report on the country between the Lake of the Woods and Red River, with a copy of the map accompanying it, is published in the "Blue Book" of last year.

The region embraced in the other surveys above enumerated will be more particularly described in this report.

When these surveys were progressing in the spring, I endeavoured to collect a supply of provisions for our then contemplated excursion to the westward, and this was a matter of some difficulty, in consequence of most of the available supplies having been bought up by the Hudson's Bay Company, the unusual scarcity in the settlement, and the desire of the settlers to keep a supply on hand in case of their crops failing. In one place we succeeded in getting a bag of pemican, and in another a little flour, added to which we bought and salted some beef and pork, so that by the 10th of May, when we were prepared to set out, although the supply was by no means so great as could have been wished, the country abounded in game, and we were not apprehensive as to the result.

In my report of the 4th July, 1858, I have given a brief account of our exploration to the westward of Red River. Before setting out it struck me that a better knowledge of the country, in reference to its geographical features and the facilities for navigation, could be obtained by travelling in canoes than in the usual manner on horseback, as, in the latter case, we could only follow the beaten lines of road where the country has been so often described by travellers, and the result fully justified my anticipations in this respect, for, while we had an opportunity of observing the rivers and lakes, we obtained from the men who were with us much valuable information in regard to the country. They were natives, and had travelled in every direction, either on their hunting excursions or in the service of the Hudson's Bay Company; added to which we made excursions from the rivers and lakes as often as opportunity permitted; on ascending Swan River we sometimes travelled as much as fifteen or twenty miles in one day through the adjacent forests and prairies.

Returning from this excursion we reached Red River on the 29th of June and found the men brought up by Professor Hind waiting for us. They came without supplies, contrary to what I anticipated, so that no provision had been made for them, and we had, in consequence, again to scour the settlement in order to get enough of provisions to supply the party on the long journey to Lake Superior. There are, however, some circumstances connected with our being placed in this dilemma which render it necessary for me to make it the subject of a separate communication. In the meantime I confine myself to saying that we eventually succeeded in obtaining a supply and left the Red River Settlement; one division of the party on the second day after our arrival, and the other on the 10th of July.

The explorations subsequent to this period are detailed in my reports of 21st August, 23rd September and 28th October. They embrace an examination of the country bordering on the Rainy River and the various routes between Rainy Lake and Lake Superior, and will be further noticed in describing the section of country to which they have reference.

GENERAL DESCRIPTION OF THE COUNTRY BETWEEN LAKE SUPERIOR AND RED RIVER.

The region through which the explorations have extended embraces two sections of country widely different in physical character. The first, extending from Lake Superior to Lake Winnipeg, is of the primitive or crystalline formation. In its general aspect it is a hilly and broken country, intersected by rapid rivers and wide-spread lakes. The mountains, however, do not rise to any great elevation, except on the immediate borders of Lake Superior, and there are several fine alluvial valleys, the most extensive of which is that of Rainy River, which has been so often referred to in previous reports. The lakes and rivers present long reaches of navigable water, the principal of which, extending from Fort Frances to the western extremity of Lac Plat, is 158 miles in length. Dense forests cover the whole of this region, and the most valuable kinds of wood are seen in various places and in considerable quantities. Elm is to be found on Rainy River, and white pine of a fair size and good quality, abounds on the borders of the streams which rush down the steep declivity of the eastern slope to Lake Superior; but it is still more abundant on the western slope, on the waters which flow towards Rainy Lake. On the Sageinaga River, and on the Seine and Maligne, there are extensive forests of red and white pine. Occasional white pine appears too in the beautiful valley of Rainy River and on the islands in the Lake of the Woods, but on proceeding westward they become more rare, and on nearing Lake Winnipeg disappear altogether.

When the pine forests in the neighborhood of Rainy Lake are considered in connection with the fertile region to the westward of Red River, where there is but little wood fit for economic purposes, and regarded in reference to what may be the future wants of that extensive district, they assume an importance not to be overlooked in estimating the resources of this part of the country.

Of the Lakes in this section, the Lake of the Woods is the most extensive. From Lac Plat, which may be regarded as its western extremity, to White Fish Lake, which is a somewhat similar extension in an opposite direction, the distance is not far short of 100 miles, and from the mouth of Rainy River, at the entrance of the Lake to its outlet at Rat Portage, in Lat. 49°47′ North, and long. 94°44′ West, the distance is about 70 miles, so that altogether it may occupy an area of sixteen hundred square miles. This extensive sheet of water, like all the other lakes on the line of route, is interspersed with islands, and on some of these the Indians have grown maize from time immemorial, and have never known it fail, so that the climate cannot be unfavorable for agricultural operations. To what extent the country on the main land may be fit for settlement can only be ascertained on further exploration; for, except on the borders of Lac Plat, it has not been at all examined. It would be difficult to conceive anything more beautiful of its kind than the scenery of this lake. Islands rise in continuous clusters, and in every variety of form. Sometimes in passing through them the prospect seems entirely shut in; soon again

it opens out, and through long vistas a glance is obtained of an ocean-like expanse, where the water meets the horizon. Not a trace of civilization is anywhere observable, but the Indians are numerous, and, indeed, this lake seems to be their favorite resort in summer; the wild rice on its borders, and the fish which abound in its waters, affording them an easy means of subsistence, not to mention the maize which they grow on the islands. They are a fine looking race, and if removed from the humanizing influences of civilization, they are also strangers to the vices which it brings. The men are generally tall and well formed, and some of the women remarkably comely, but they are not very cleanly in their habits, and there can be nothing more suggestive of indolence than their mode of life, which, however, has one feature to recommend it in the entire exemption from care with which it seems to be attended. Gliding in their light canoes from island to island, basking in the sunshine on some pebbly strand, and merely exerting themselves to an extent sufficient to supply their immediate wants, the future affects them not, and they appear to be supremely happy; but the winter brings its troubles, and they have then to betake themselves to the forests in single families, where, having only game to depend upon, they are sometimes sadly straitened.

From the Lake of the Woods to Lake Winnipeg, the Winnipeg River presents a succession of lake-like expanses and foaming cataracts, making altogether a descent of about 360 feet in a distance of 160 miles. The shores are in general rocky, but there is nothing to warrant the assumption that there may not be good land at some distance from the river; for on making enquiries of the Indians who were familiar with the country, we learned that the region inland was comparatively level, or rising only in undulations which scarcely deserve the name of hills. To explore it, however, would be a mere waste of time, as it is not on the line of route which, instead of following the Winnipeg, must strike across the country from the Lake of the Woods to Red River.

Some of the falls on the Winnipeg are remarkably beautiful, and acquire additional interest from the wildness of the surrounding scenery. The Silver Falls, Pointe du Bois, and Chute à Jaquot are all very imposing, more especially the latter, which is one of the few places where the whole volume of the Winnipeg can be seen. In general, however, the scenery is comparatively tame. High rocky bluffs, woody islets and lakes, compose a picture pleasing enough in itself, but wearisome from its monotony.

THE RED RIVER COUNTRY AND THE REGION TO THE WESTWARD THEREOF.

This is a region differing as widely as may be in its physical character from that which has just been described. Although the distance across from the Lake of the Woods to Red River is but ninety miles, the country undergoes a complete change. Instead of the lakes with their woody islets, the clear running streams and foaming rapids, and the swelling hills covered with forests of pine, an undeviating flat spreads out every where, vast prairies open up where the eye seeks in vain for some prominent point to rest upon, and the rivers, richly bordered with trees of another kind, flow with a sluggish course through the great alluvial plain. However, if the scenic beauty which characterizes the region so near it to the eastward is wanting, this country is incomparably superior in all that can minister to the wants of man. Civilization has already set its impress upon the soil, and human habitations appear at intervals for a hundred miles along the Red River and the Assiniboine.

The tongue of land immediately to the eastward of Red River, within the boundary line, and between it and the Lake of the Woods and the River Winnipeg, is remarkable, inasmuch as it divides the wooded from the prairie region, partaking to some extent of the character of both. Its eastern border, on the Lake of the Woods and the Winnipeg, is of the crystalline formation, of an uneven surface, and densely wooded. Its western, on the Red River, presents wide prairie openings, and for a distance of about thirty miles back is of an alluvial soil. Immediately to the westward of the Lake of the Woods, and but slightly elevated above it, there is a marshy plateau, scantily wooded, from which the Roseau River flows westward to Red River, the White Mouth River northward to the Winnipeg, and several inconsiderable streams eastward to Lac Plat, and the Lake of the Woods itself. Westward of this plateau the land descends evenly to the prairie bordering on Red River, and to the northward it declines very gently to Lake Winnipeg; another river, the Broken Head, taking its rise on the slope between White Mouth River and Red River, about six miles to the eastward of which latter it flows into Lake Winnipeg in a reedy marsh. In the marshy plateau just referred to lies Lac des Roseau, issuing from whence the Roseau, or Reed Grass River, flows westward almost at right angles to the general direction of the streams. On leaving Lac des Roseau it has at first a sluggish course through a reedy marsh, it then rushes rapidly through a wooded country, making a descent of about 250 feet in the distance of thirty miles to the prairie bordering on Red River, through which it winds its way with a comparatively gentle current.

The obstructions which occur in its course through the wooded region, and the great descent which it there makes, preclude the probability, not to say possibility, of its ever becoming available as a channel of communication, except for very small and light canoes, between Red River and the Lake of the Woods; that is, unless it should be thought advisable at some future period when the country becomes settled, to make it the course of a canal, taking a supply of water from the Lake of the Woods, a thing which is by no means impracticable, the Roseau Lake being almost on the level of that Lake and no high land intervening between them.

Besides the Roseau several inconsiderable streams, among which the Rat River and the Seine—mere brooks—are the principal, join the Red River from the eastward.

The Red River itself has a course nearly due north from the boundary line at Pembina to Lake Winnipeg, a distance in a direct line of 104 miles. It has an average width of about 300 feet, and is navigable to vessels of light draught, as it is, also, far to the south beyond the boundary line. Near Lake Winnipeg the banks are low and marshy, but from the Indian Settlement upwards they vary from twenty to thirty feet in height. Beyond these the prairie is almost level, having but a very slight inclination to the River. Frequently there are two or more terraces before the prairie level is attained, and these are subject to be overflowed in seasons of extreme high water. Twice within the memory of the present generation, once in 1826, and again in 1852, the water has spread over the upper terrace to the extent of several miles from the river but to no great depth, sufficient, however, to drive the settlers on the immediate banks of the river from their homes; but they are now building their houses on more elevated ground than they formerly did, and it is to be hoped that they may not be subjected to a recurrence of the evils which they then experienced.

At Fort Garry, in latitude 49° 54′ North, and longitude 97° 21′ West, the Red River is joined from the westward by the Assiniboine, its principal tributary; several smaller streams also join it from the same direction, as delineated on the accompanying map, but they drain but a limited area and require no particular description.

The Assiniboine River, and the Manitouba and Winnipegoos Lakes having been referred to at considerable length in my report of the 4th July, 1857, I shall in this avoid as far as possible going over the same ground, merely endeavouring to convey a general idea of the country and supply what may have been omitted. The lakes acquire great importance from the easy access which they afford to the neighbouring territory. They extend in a direction from south-east to north-west about 300 miles. The stream by which they discharge their united waters into Lake Winnipeg is called the Little Saskatchewan, in contra-distinction to the Saskatchewan proper. There is another stream taking its rise on the Duck Mountain and flow-

ing into the Assiniboine, called, also, the Little Saskatchewan, but more commonly known as the Rapid River, by which name I have designated it. I mention this to avoid confusion of names.

The country westward of Red River, so far as we have explored it, presents three divisions, which, although possessing many features in common, are yet of a character in some respects distinctly different.

Of these the great alluvial flat extending from the 49th parallel to the Saskatchewan, bounded to the eastward and north-eastward by Lake Winnipeg and the wooded region between Red River and the Lake of the Woods, and on the south-west by the high lands which extend from the boundary line to the Pasquia Mountain, on the Saskatchewan, may be regarded as the first. It has a length of 340 miles, and an average width of 60 or 70, and may embrace an area of 20,400 square miles. About one-third of this extent is chiefly open prairie land, and the remaining two-thirds mostly wooded. From Pembina to Lake Winnipeg the prairie land vastly predominates, but from thence north-westward to the Saskatchewan the forests gradually become more dense until they cover the entire face of the country. The whole of this region is very level, and, if exception is made of the lands immediately bordering on Lake Winnipeg and the Saskatchewan, the soil is of an alluvial description, and so rich that, as experience has shewn, wheat may be grown for twenty successive years without exhausting it. A considerable portion of the area is occupied by swamps and lakes, but the swamps, so far as I had an opportunity of observing them, are mere marshes, with a bottom of alluvial soil, similar to that of the dry prairie, and so firm that horses and cattle can wade through them in almost any direction. They seem to owe their existence solely to the extreme flatness of the country, and as they are at a much higher level than the streams, which all run in deep channels, they might be very easily drained; indeed, with a proper system of drainage the whole of this great alluvial flat might be brought under cultivation, except, of course, where it is periodically overflowed, and the extent to which it is subject to be so is quite insignificant as compared to the whole area. Of the lakes, the Manitouba, Winnipegoos and Shoal Lake are the principal, and these may occupy an area of about 2700 square miles.

The streams which flow through the prairie are all bordered more or less with forests, in which oak and elm of a fair size are to be met with, although not in very great quantities. In the wooded section, of which, however, less is known, poplar predominates, but on the borders of the lakes and streams, larch, spruce, birch and oak are to be found, of a size and quality available for economic purposes.

The second natural division embraces the hilly region which, as has been stated, forms the south-western boundary or embankment of the great alluvial flat which has just been described; it extends from the 49th parallel to the Saskatchewan, a distance in a north-westerly direction of 360 miles, and may have an average width of 40 miles.

This region is of a character more varied, and, perhaps, on that account more interesting than any other part of the country. High rolling banks and elevated plateaux, covered with dense forests, alternate with wide spread valleys of unsurpassed fertility. Numerous streams taking their rise among the hills, run with a rapid course towards the Assiniboine on the one side, and to the Manitouba and Winipegoos Lakes on the other. Of these the principal are the Dauphin River, Spruce River, Duck River, Swan River, Red Deer River, and the Waukctsequapawoo or Floating Ice River, which flow into the Winnipegoos Lake; and Shell River, Birdtail Creek, Arrow River, Rapid River, and Oak River, which run to the Assiniboine. The hills are known as the Riding Mountain, Duck Mountain, Porcupine Hill, Thunder Mountain, &c. Of these the Porcupine Hill and Thunder Mountain alone deserve the name of hills; the Duck and Riding Mountains being nothing more than elevated plateaux of great extent penetrated by deep glens. As seen from the Winnipegoos Lake, the Duck Mountain presents a perfectly even outline, rising to the height of perhaps 500 or 600 feet above the lake. Porcupine Hill, or range rather, may have an altitude of 1500 feet above the surrounding country, while Thunder Mountain is but a higher swell in the undulating ridge which connects this range with the Duck Mountain. When first seen on ascending the valley of Swan River, Thunder Mountain has a very striking resemblance to the Montreal Mountain, and it acquires interest from the fact that the Indians report coal on its eastern declivity.

Throughout the whole of this region wood is in sufficient abundance to supply the wants of settlers for generations to come. The high lands are in general densely wooded, and the valleys present about an equal extent of woodland and prairie. Salt springs occur in various places on the shores of Winnipegoos Lake and in the lower part of Swan River. At these springs the Hudson's Bay Company manufacture salt for their own use; and an enterprising individual of the name of Monkman has established works, where he makes enough for the supply of the Red River Settlement.

With respect to the nature of the soil, and appearance of the country, I cannot do better than transcribe an extract from a journal which I kept while ascending Swan River, the valley of which, from all I could learn, very much resembles that of Red Deer River, and the other streams which have been mentioned as flowing into Winnipegoos Lake.

7th June.

Crossed over this morning to visit the salt springs (on the western shore of Winnipegoos Lake, about 6 miles from the mouth of Swan River). On landing we ascended a steep bank, which has the appearance of an artificial embankment, within which, and but slightly elevated above the level of the lake, a bare flat, without tree, shrub, or grass of any kind, occupies an area of 20 or 30 acres. The surface of this flat is encrusted for the most part with a saline substance; and throughout its entire extent there are numerous little mounds, from the top of which issue springs, all of them emitting more or less gas. We found here a family of half breeds engaged in the manufacture of salt, and we learned from them that the mounds sometimes subside, when the ground begins to swell in another place, and another spring bursts forth. The water is, in taste, like that of the St. Léon water of Lower Canada, and on being drunk, produces the same effect. Similar springs, we were informed, occur on Shoal River, between the Winnipegoos and Swan Lakes. Leaving the salt springs, we ascended Shoal River, which is the name here given to Swan River, and crossed over Swan Lake, at the head of which we encamped for the night. The scenery of this lonely region is really beautiful of its kind. As we passed through Swan Lake, the sun was setting behind a range of hills which rose over a low wooded country to the west. To the south the blue outline of the Duck Mountain was just discernable on the verge of the horizon; while we, in our tiny craft were gliding on through woody islands, rich in the first green drapery of summer. Perhaps the tranquil scene on which we looked impressed us the more from having been buffeted for some days previously on stormy lakes, to the navigation of which our little canoes were but ill adapted. This evening we set nets, and obtained a good supply of fish.

8th June.

Continued our course up Swan River against a tortuous stream with a strong current. The banks of the river, near Swan Lake, are of an alluvial soil, but so low that they must be occasionally overflowed. As we ascend they become higher, and the growth of timber indicates a soil of unsurpassed fertility; weather fine, but rather windy.

9th June.

Start at daybreak, and at 8 a.m., reach a building called the store, at which we find 40 carts, which the Hudson's Bay Company use in the fall to draw their supplies inland, but see neither men nor horses. Breakfast and an observation taken, we continue our course, passing through a fine country. Gradually the river becomes more rapid, but we make, nevertheless, a fair journey, having come over 20 miles against a very strong current. To-day I travelled a long distance by land; the

soil is good, but densely wooded, chiefly with poplar of a large size. In the low grounds, however, spruce and larch are abundant; and on the banks of the river maple is to be seen on the flats. The weather continues fine, but the mornings are rather cold.

10th June.

This morning we were awakened by a regular serenade from the birds; the woods here are positively alive with them. Continue our course, but are much delayed by the shallowness of the stream, and continuous rapids, full of large boulders. Having made a few miles, I leave the canoe, and march by land. The flats have given place to high rolling banks, and wide prairie openings appear among the forests. As we proceed the country becomes still more open; and to judge by the progress of the vegetation and the black mould thrown up in countless hillocks by the moles, the soil must be very rich. Where land slips occur on the immediate banks of the river, they exhibit a face of yellow loam, or stiff clay, curiously stratified, and shewing the presence of minerals in the water which oozes from between the strata. To-day we saw some elk, but failed to get a shot; we also saw numerous bear tracks, but saw none of those interesting animals. The weather continues clear and fine.

11th June.

Dispatched an express at daybreak to Fort Pelly, in order, if possible, to get horses to take the baggage across to the Assiniboine by the time we should reach the carrying place; then send the men to pole or track up the rapids as best they might, while de Salaberry and I walk by land, in order the better to obtain courses and distances, and ascertain the nature of the soil, &c. We pass through a beautiful country, presenting about an equal extent of woodland and prairie. As we proceed, the openings become larger, and the wood less frequent. The valley seems to be about thirty or forty miles in width. To the west appear the Porcupine Hills, which separate it from the valley of Red Deer River, to the south, Thunder Mountain rises like a blue cloud in the distance, and to the east the smooth outline of the Duck Mountain is seen at intervals through the openings in the forest. The weather to-day was delightful, and the appearance of the country so pleasing, that we wandered too far, and, being unable to rejoin our party, had to sleep supperless and without covering.

12th June.

Rejoin the party, breakfast, and then leaving De Salaberry with the canoe, I take a man with me, and proceed by land. We continue to walk on for about 20 or 25 miles to the carrying place, in the hope of meeting the people who had been sent to Fort Pelly for horses. They do not come, and as we saw nothing to shoot, or at least that we could shoot, having but a rifle with us, we go to sleep fasting under the cover of some trees. Such a country as we have passed through to-day, I have never before seen in a state of nature. The beautiful green of the rolling prairie, the trees rising in isolated groves, looking at a distance as if laid out by the hand of art, and the blue hills bounding the prospect, presented a picture pleasing in itself and highly interesting when considered in relation to the future. It required no great effort of the imagination in weary travellers to see civilization advancing in a region so admirably prepared by nature for its development, to picture herds of domestic cattle roaming over plains still deeply furrowed with the tracks of the buffalo, which, with the hunters who pursued them had disappeared forever; or to plant cottages among groves which seemed but to want them, with the stir of existence, to give the whole the appearance of a highly cultivated country. The weather to-day has been as fine as we have had it for some days past.

13th June.

Astir at daybreak, load the rifle with shot, and go in search of game; come on some plover, which we knock over, roast, and have a delicious repast. Scarcely have we done when horsemen appear galloping down the opposite bank. They prove to be our messengers, bringing six horses from Fort Pelly, Mr. McDonald, the gentleman in charge, having kindly sent me his own horse to ride. This was was very civil, seeing that he had never heard of us before, and knew nothing whatever about us. But the Hudson's Bay Company's officers are equally polite at all their stations. We mount and go in search of the canoe, and have the pleasure of galloping over the plains where we had such a weary walk yesterday. We fail to find the canoe, however, and camp on the prairie, having first hobbled the horses in the approved manner of the country. Weather to-day oppressively hot.

I conclude my remarks on this section by saying that the Indians report coal on the Rolling River, a tributary of Swan River—which has its source in the Duck Mountain—on Swan River itself, above the carrying-place, and in Thunder Mountain. It has also, they say, been met with on Red Deer River. We found some specimens, but not *in situ*, in going up Swan River, and these are noticed in Mr. Billings' able remarks on the geology of the country.

I shall consider as the third grand division the vast prairie region extending from the broken ground just described, westward to the source of the Assiniboine, bounded on the south by the 49th parallel, and on the north by the Saskatchewan. Doubtless much of the country still farther to the west and northwestward might be comprehended in this as being of the same character, but I confine my remarks to what came under my observation, or of which I obtained reliable information.

Regarding this region in its general aspect, it is apparently level, or but slightly undulating, with an inclination to the eastward. It is however at a great elevation above the valley of Red River, even on the borders of the hilly tract, and gradually increases in altitude on proceeding to the westward, the sources of the Qu'Appelle taking their rise in a country probably 500 or 600 feet above the level of Red River. Through this high plain the streams run in valleys varying from one hundred and fifty to two or even three hundred feet below its general level. These valleys vary in width from a quarter of a mile to two or three miles, and have commonly a pretty uniform direction, but the streams wind through them in an exceedingly tortuous course. The plains, although at such an elevation above the streams, are much the same in appearance as those in the low alluvial valley of Red River, and present a soil apparently of as great fertility. Wood is not, however, so abundant, but on the immediate borders of the Assiniboine it is sufficiently plentiful to supply the wants of a new settlement.

The streams can be navigated, most of them, by light canoes, but they could only be rendered available for general traffic at an enormous outlay. Flat bottom boats may descend the Assiniboine at high water, but it would be an extremely difficult and tedious task to take craft of any kind up it, for, notwithstanding that it has a very tortuous course, sometimes winding about for three miles to make one in a straight direction, it is, nevertheless, very rapid, having a descent in some places of ten feet per mile. From the Rapid River downwards, in passing through the hilly region from the higher prairie plateau to the lower, it makes a descent of at least 300 feet in the distance of 50 or 60 miles. So that the difficulty of rendering it navigable to craft of considerable size may readily be conceived.

At the sources of the Qu'Appelle, a tributary of the Assiniboine, there is said to be a lake which during the spring floods discharges its waters two ways; that is, into the south branch of the Saskatchewan as well as into the Qu'Appelle, and some travellers who have passed that way imagine that they see in this a means by which a water communication might be opened through the valleys of the Assiniboine and Qu'Appelle to the Saskatchewan, and some others, without considering the configuration of the country, have adopted the same pleasing but delusive idea, the absurdity of which, in the present state of the country, will be apparent when it is considered that in the Qu'Appelle there is not water enough for the supply of a canal, that even if a supply could be introduced from the Saskatchewan there would still be the important item of at least 500 feet of lockage to provide for, and that locks would have rather an unstable foundation in the bottom of a soft alluvial valley like that of the Assiniboine, which must carry off the drainage of the high prairie plateau on either side, and which in many places is periodically overflowed between the higher banks which hem

It in, affording no means of commanding or carrying off the surplus water.*

So difficult is it to navigate these streams, even in small canoes, that the Indians and traders prefer the use of carts, with which they travel over the plains with great facility.

But, if the rivers cannot easily be rendered navigable, the country is admirably adapted for railroads, and when settlement is introduced and trade has arisen, these will become an imperative necessity.

GENERAL REMARKS.

Taking the three sections of country just described, collectively, they embrace an area of 107,000 square miles or 68,056,000 acres, deducting 7,000 square miles for the area of the Lakes Manitouba, Winnipegoos, &c., and the barren lands bordering on Lake Winnipeg and the Saskatchewan, and there remains an area of 100,000 square miles or 64,000,000 of acres, chiefly of the prairie character, and in general fit for cultivation. In estimating the value of the western region, however, it must be borne in mind that this does not amount to a fourth part of the area, which, in point of soil and climate, is usually considered to be available for settlement. Far beyond the sources of the Assiniboine, on the slopes of the Rocky Mountains and northward to Peace River, there lies a vast region where the climate is on the average not inferior to that of Upper Canada. For, admitting that the summer isothermals have a northwest direction, as is incontrovertibly proved by Lorin Blodget and others, the climate of the valley of Peace River in 56° North latitude and 117° West longitude ought to be equal, if not superior, to that of Red River in the 50th parallel, and the observations of travellers seem to confirm this assumption. Sir Alexander McKenzie writing on the 10th of May, in reference to the valley of Peace River, says:—"The whole country displayed an exuberant verdure." Now, at Red River, on the same date last year, the trees were only just coming into leaf, and the green grass of the prairies beginning to shew itself above the withered herbage of the former year, so that Peace River would seem to have the advantage. But, without going so far north, there is a vast area where no dispute can be raised as to the climate, equally valuable with the region which I have endeavoured to describe.

In respect to the natural productions of the country in its present state, wood, as has been already stated, is in sufficient abundance, more especially in the eastern sections, to supply the wants of settlements for a long time to come. Oak and elm are to be had in small quantities, and a sufficiency of birch, larch and spruce might be obtained for building purposes. There is not a pine tree, however, so far as we could see, in the whole region through which we travelled, and the belief that there is arises from the circumstance of the natives calling spruce, cypress, &c., by the generic name of pine. The prevailing growth every where is poplar, and how that species of wood should be so prevalent, on soil so different from what it grows on in Canada, is due to the fires which so frequently sweep over the country. A prairie, or forest even, over which the fire has passed, is just prepared to receive the downy seeds of the poplar which in the month of June are constantly floating in the air. The Indians say, and I think there can be no doubt of the fact, that but for the fires the prairies would soon be overgrown with wood. Be this as it may, the rapidity of the growth of the poplar, once it has taken root in the rich soil of these plains, is truly astonishing.

*Since writing the above I have had the advantage of hearing Professor Hind's lecture on the subject to which it refers, but, even admitting that the whole volume of the South Branch of the Saskatchewan could be turned into the Qu'Appelle, it must not be supposed that locks could be dispensed with. It is possible, indeed, that in the valley of the Qu'Appelle itself, where the descent is represented as being very gentle, the current might not be too strong for steamers of great power. But, on the Assiniboine, from the Rapid River downwards, in making the descent from the higher prairie to the lower, where, as I have said, there must be a fall of 500 feet the accumulated mass of water would rush with the impetuosity of a mountain torrent. The plains of Red River would be converted into a sea, and the Settlement swept into Lake Winnipeg. Fortunately, this contingency is rendered highly improbable by the fact that to produce it a dam of 86 feet in height would be required across a river half a mile in width.

Stone of all kinds, fit for building purposes, is to be found on Lake Winnipeg; limestone appears on Red River, and is very abundant on the Manitouba and Winnepegoos Lakes; sandstone and limestone occur on the Assiniboine, about 150 miles west of Fort Garry, but farther to the west there did not appear to me to be fixed rock of any kind, that is, as far as we travelled.

In considering the means by which settlers could support themselves on being first introduced into the country, a very important article of consumption would be found in the fish, which are very abundant in the rivers and lakes; sturgeon, white-fish, pike, doré, and various other kinds are found in Lake Winnipeg. In Manitouba and Winnipegoos Lakes the white-fish literally swarm. On one occasion we caught with a very small net as many as sixty, equal in size and, I think, superior in flavour to the white-fish of Lake Huron. Ducks, geese, and aquatic fowl of all sorts frequent the marshes and lakes throughout the country. On passing along the reedy shores of Manitouba and Winnipegoos Lakes the ducks rose before us in a continuous cloud, for hundreds of miles. While descending the Assiniboine we had nothing to eat except what we shot, and in an hour or two at any time we could lay in a supply of ducks, geese and other fowl sufficient for two days. At certain seasons prairie fowl and snipe are numerous, and pigeons are sometimes very abundant. Moose deer, elk, and antelope are to be found on Swan River and some parts of the Assiniboine. Farther to the west the Buffalo roam in countless herds, and the pemican and dried meat made from their flesh are important articles of trade in the territory. A party of Red River hunters killed as many as four thousand of these animals on one excursion last summer.

Now, although the occupations of an agriculturist are not exactly compatible with those of a hunter, still the presence of so much that, in cases of necessity, might be made to contribute to the support of a settlement in its first stage should not be lost sight of.

GEOLOGICAL FORMATION OF THE COUNTRY.

No practical geologist having accompanied the party, I was careful to collect such specimens of fossils, shale, and coal as I conceived would best illustrate the geological formation of the region. These I submitted to Sir William Logan, and Mr. Billings, as already stated, and I would invite particular attention to the following most interesting communication from Mr. Billings.

GEOLOGICAL SURVEY OF CANADA,
Montreal, 21st Feb., 1859.

DEAR SIR,—The fossils and rock specimens submitted by you for examination, are of great scientific importance, as they demonstrate the existence, in the country lying west of the Red River, of a formation not heretofore recognized within the British territories of the north-west. It has been long known, through the various papers published by Dr. Bigsby, Sir John Richardson, and others, that from the neighbourhood of the Lake of the Woods, a belt of silurian limestones and shales runs north-westerly to the vicinity of Great Bear Lake; but up to the present time we have had no data whatever upon which to found an opinion as to what might be the geological age of the vast region lying between this belt and the Rocky Mountains. Your collection furnishes us with almost indisputable evidence that a considerable portion of the territory belongs to the cretaceous period, or the great chalk formation so largely developed in the Old World. This one fact, which I believe to be now sufficiently established, is of the greatest value, as it affords a starting point, or foundation, upon which the materials collected by future explorers can be readily worked out.

The specimens were quite sufficient to enable me to determine the general question of their geological age, but as it was advisable to have also the opinion of scientific men who have made the cretaceous rocks their special study, I forwarded some of the fossils to Messrs. Meek and Hayden, who are now at Washington engaged upon the collections of the Government explorations of the United States. These gentlemen are the highest

authorities in America on all points relating to the secondary and tertiary formations of the central portion of the continent. Their opinion is very cautiously given, but it is the more valuable on that account.

Dr. Dawson, Principal of McGill College of this City, examined microscopically several specimens of the fossil wood and lignite.

T. R. Jones, Esq., of the Geological Society of London, has decided that one of the small fossils from the limestone of Lake Winnipegoos (which I sent him in a letter) is a new species. All the others being silurian forms I have determined myself. It is not necessary in this communication to give technical descriptions of all the fossils in the collection, and, indeed, it would not be advisable to do so, for in most instances where species are defined without a careful examination and comparison of many good specimens, more or less error has been superinduced. I earnestly hope that another year's exploration may yield much new material, which will enable us to push further the work that has been so well commenced; I shall, therefore, for the present limit my report principally to the opinions of the several gentlemen who have been kind enough to furnish me with their assistance in the departments of the science in which they are so justly celebrated, with but a few general observations of my own. The following is Messrs. Meek and Hayden's letter:

SMITHSONIAN INSTITUTION,
Washington City, 5th Feb., 1859.

DEAR SIR,—The box of specimens sent by you interests us very much, as they seem to prove the existence of the cretaceous system in these far North-western territories. The *Ammonite* is undoubtedly identical with a species very abundant in the cretaceous beds of Nebraska. It is the form usually referred to *A placenta* of DeKay. The figures and descriptions of this species, published by DeKay and Morton, are not very satisfactory, as these gentlemen seem to have sometimes confounded it with another species since described by Prof. Tuomy under the name of *A lobatus*, which is sharply carinate on the dorsum. If you will look, however, at the figure first published by DeKay, (Annals N. Y. Lyceum Nat. Hist., Vol. II. p. 5,) you will see that he must have had before him, when he named his *A placenta*, the form with the flattened or grooved dorsum, which is common in New Jersey and Alabama. In Nebraska it occurs in formation No. 4, of the cretaceous series of that region.

The only question in regard to your specimen is, whether it may not have been carried by the Blackfeet Indians from some of the Upper Missouri localities. This tribe you know ranges from the head waters of the Missouri far north-west into the Hudson's Bay Territories; and in common with other Indians they are in the habit of carrying with them shells or any other bright object that may attract their attention or excite their curiosity. The matrix of the specimen you have sent is exactly like that in which most of our Nebraska fossils are enveloped, in formation No. 4, as you will see by the specimen of *Inoceramus sagensis* we send you. The shell itself is also precisely in the same state of preservation. Still it is quite probable that rocks belonging to the cretaceous system may occur in the region where the Indian says he obtained this specimen, which conclusion the other specimens from near Fort Garry seem to favor. If so, *Ammonites placenta* is one of the very species we would expect to find there, since it is known to have a great geographical range.

The fibrous material in the specimen No. 1, has exactly the structure of the external layer of the shells of *Inoceramus*, and is very similar to specimens in our possession from formation No. 3 of the Nebraska section, of which we send you a specimen with a few valves of *Ostrea congesta*, attached. We have always suspected these to be fragments of *Inoceramus*, flattened by pressure. The objection to this conclusion is the large size of some of the pieces, and the fact that no large *Inoceramus* is known to occur in this part of the series. The dark fragments in the specimen No. 1, appear to be fragments of fish bones.

No. 2 is unlike anything in our collection. It has the form and general appearance of a Dentalium, but on a closer examination it will be seen not to be hollow like the shells of that genus, but solid and composed of minute fibres radiating from a central or sub-central axis as in the genus *Belemnites* though it does not appear to have the semi-translucent horny appearance so common in that genus.

The small oyster in No. 3, seems to be different from *O. congesta*. We send you specimens of the latter, however, so that you can make a comparison.

The dark shale from the Assiniboine, 250 miles from Fort Garry, is undistinguishable from many specimens in our possession from No. 2 of the Nebraska section, along the Missouri above Big Sioux River, and from near the Black Hills. It also contains small scales of fishes, which we regard as identical with some we have from that formation. We send you specimens marked A. 1 and A. 2. These you will observe are almost exactly like that on your specimen, and lead us to think they belong to the same species and the same epoch.

The flaky specimens, we think, if organic, must differ from any thing in our collection.

Very truly yours,

MEEK & HAYDEN.

In explanation of such portions of the above letter as refer to the Nebraska section of the cretaceous rocks, I beg to state that Messrs. Meek and Hayden have carefully explored and mapped geologically a large tract of the north-west Territory of the United States, extending as far north as the boundary line or within one hundred miles of the Assiniboine. In Nebraska they find these rocks to exhibit the following series.

No. 5. 100 to 150 feet of gray and yellowish arenaceous clays, sometimes weathering to a pink colour. Great numbers of marine *mollusca*, with a few land plants, bones of *Mosasaurus*, &c.

No. 4. 350 feet of bluish and dark plastic clay, containing numerous marine *mollusca*.

No. 3. 100 to 130 feet lead gray calcareous marl, weathering to light yellowish tint. Scales of fishes. *Ostrea congesta*, *Inoceramus*, *Problematicus*, &c.

No. 2. 90 feet dark gray laminated clay. Scales of fishes with a few small *Ammonites*, &c.

No. 1. 90 to 100 feet of yellowish sandstone and clay with water-worn fragments of lignite not known to belong to the cretaceous system.

In this section No. 1 is the lowest and the others lie above it in the order designated; No. 5 being the highest rock identified with the cretaceous formation; above No. 5 there is a deposit nearly 700 feet thick of tertiary rock with much lignite and numerous remains of huge land animals of extinct forms.

It is first worthy of notice that lignite occurs in No. 1, which is the bottom of the series, and also in the Tertiary which is the top of the whole group. Your specimens of lignite coal, therefore, not having been found in place, may be either of cretaceous or tertiary.

The Ammonite procured from the Indian belongs to No. 4, and that this formation does exist in the north-west I have some additional evidence in several fossils placed in my hands by Geo. Barnston, Esq., of the Hudson's Bay Company, after I had forwarded yours to Meek & Hayden. These were procured from a man who said he found them in the bed of the Saskatchewan. One is undoubtedly *Scaphites Nicolettii* and another *Nautilus DeKayi*, both characteristic of formation No. 4.

Taking the evidence of these fossils with the fact that all the cephalopoda except one, mentioned in Meek & Hayden's published works, occur in their Nos. 4 and 5, the opinion that these deposits do exist in the north-west may be advanced with a good deal of probability of its being sooner or later confirmed by positive proof. I judge a good deal from the condition of the fossils which I think had not been carried far before they came into the hands of yourself and Mr. Barnston.

The specimens of dark shale which, according to your memorandum, were "found on the Assiniboine, 250 miles from Fort Garry, where the banks or hills bordering the valley are composed of the material," are more satisfactory because they were taken from the bed.

I have carefully compared yours with those forwarded by Meek and Hayden, and feel quite satisfied that they are the same, both lithologically and palæontologically. I think it well established by these specimens that No. 2 of the Nebraska section does exist at the place on the Assiniboine where they were procured.

The specimens taken from the beds overlaid by sandstone 150 miles from Fort Garry being the small oyster, the fossil resembling dentalium, and also the fibrous substance, are all of doubtful species. More specimens should be procured. They appear to me to be cretaceous, but although we have in the museum of the survey a noble collection of English chalk fossils, I cannot find any that agree exactly with yours.

Judging from the aspect alone I have no hesitation in saying that they are either Jurassic or Cretaceous, and although the species cannot be determined, *yet they establish this important fact, that at a point on the Assiniboine, 150 miles west of Fort Garry, secondary rocks do occur.* That this fact is of great value any one may convince himself by connecting it with the existence of the belt of silurian rocks known to run from the Lake of the Woods by Lakes Winnipeg and Winnipegoos, north-westerly. This belt of silurian rocks consists of strata, which, upon the whole, dip towards the south-west, and must run under the locality on the Assiniboine. If, therefore, the true coal measures exist at all in that part of the country, they will be found between the western edge of the silurian belt and a line passing through a point 150 miles west of Fort Garry, and running north-west and south-east. The Assiniboine rocks are newer than the coal formation, and the silurian older, and thus by fixing the age of the former the coal question is narrowed down as it were to a tract of country 150 miles wide. I do not affirm that coal does exist there, but I think it a part of the country which should be submitted to a very careful geological investigation.

The specimens of tertiary coal collected by you are very different from that of the true carboniferous period. You are aware that in general it is not found in sufficient quantities to be of economic value. Beds, however, two feet in thickness are known to occur, and it is not beyond the limits of probability that some large deposit may be discovered which would furnish a great amount of fuel.

The following are the results of Dr. Dawson's examinations:

NOTE ON FOSSIL-WOOD AND LIGNITE FROM THE NORTH-WEST.

No. 1. *Coniferous wood mineralized by iron pyrites.*—It is not sufficiently well preserved to allow its minute structure to be seen.

No. 2. *Lignite.*—This specimen has the appearance of jet, but burns without flame, emitting a fetid odour. The structure, as seen in slices and in the ashes, consists of woody fibre without medulary rays, resembling coniferous wood, but very imperfectly preserved owing to the compression of the cell walls into a nearly homogenous mass. It much resembles in structure and appearance the lignite from Mackenzie River, examined by Bowerbank for Sir J. Richardson.*

No. 3. *Coniferous wood partially silicified.*—This shows layers of annual growth, and under the microscope wood cells with circular discs in one row and close to each other. The medulary rays are numerous and have each about fifteen rows of cells. It belongs to the genus *Peuce*, of Witham, and *Pinites* of Goeppert, and closely resembles *P. Ponderosus*, of the brown coal formation of Silesia.† This would not, however, prove the formation to be tertiary since wood of very similar character occurs in Jurassic deposits. Of the modern pines with which I have compared it, it most resembles the Balsam Fir. *Abies balsamea.*

J. W. DAWSON.

McGill College,
January, 19, 1859.

* Isbister. Journal of Geological Society. Vol. 11.
† Goeppert, Monographie der coniferie.

The coal of the north-west, as I have already stated, may be either tertiary or cretaceous. It occurs in numerous localities all over the great region lying between the belt of silurian rocks and the Rocky Mountains, and far south into the United States. Sir John Richardson says that tertiary coal formations occur on the flanks of the Rocky Mountains, the most southerly one being in the Raton Pass, in latitude 37° 15′ N., longitude, 104° 35′ W., and upwards of seven thousand fee tabove the level of the sea. Leaves of dicoty—ledenous trees obtained in these beds by Lieutenant Abert, in 1847, are figured in Colonel Emory's Report to Congress, (pp. 522–547.) Nuttal observed lignite beds associated with pink coloured pipe-clay on the Arkansas, near the 48th parallel. Sir Alexander McKenzie states that a narrow stripe of marshy, boggy, and uneven ground, producing coal and bitumen, runs along the eastern base of the Rocky Mountains, and he specifies latitude 52° N., longitude 112½° W., on the southern branch of the Saskatchewan, and latitude 56° N., longitude 116° W., (Edge coal Creek) in the Peace River, as places where coal beds are exposed. Mr. Drummond's specimens of coal with its associated rocks at Edmonton, (latitude 53° 45′ N., longitude 113° 20′ W.,) on the north branch of the Saskatchewan, and consequently between the places mentioned by Sir Alexander McKenzie. According to Mr. Drummond the coal was in beds varying in thickness from six inches to two feet, and interstratified with clay and sandstone. The samples he selected were precisely similar to the slaty and conchoidal varieties which are found at the mouth of the great Bear River, and the resemblance between the sandstone of the two localities is equally close. He also found a black tertiary pitch coal which breaks into small conchoidal and cubical fragments, which Mr. Small, a Clerk of the Hudson's Bay Company, who gave the first information of these beds, likened well to Spanish liquorice. At Edmonton the more slaty coal beds pass gradually into a thin, slaty, friable sandstone, which is much impregnated with carbonaceous matter, and contains fragments of fibrous lignite. Hand specimens cannot be distinguished from others gathered from the shale cliffs on the Arthabaska River. Highly bituminised shale, considerably indurated, exists in the vicinity of the coal at Edmonton, and clay iron-stones occur in the clay beds.

Coal beds have been observed on fire on the Smoking River and near Dunvegan on the Peace River." (Journal of a Boat, Voyage through Rupert's Land. By Sir J. Richardson, 1851; vol. I, p. 197.)

The silurian specimens from Lake Winnipeg and Winnipegoos include several species which are new to science, but as before describing them it would be advisable to procure a greater number, in order to make the definitions as complete as possible, I shall not notice them further than to quote from Mr. Jones' letter what he says about the *Liperditia* from Lake Winnipegoos:

"Geological Survey, Somerset House,
"London, January 5, 1859.

"My Dear Sir,—The little *Leperditia* received in your letter, which came to hand on the third, is distinct from any species I have yet seen. In general form it resembles *Cytheropsis concinna* Ann, and mag. N. H. 3 ser., vol. 1, pl. 10, figs. 3 and 4; but it is a true *Leperditia*, and is five or six times larger. It is one of the narrowest and most cylindrical of the *Leperditia* that I know. *Cylindracea* would not be an inapt term if you like to use it.

"Yours very truly,

"J. R. JONES."

My time has been so much occupied with other work, that I have not been able to give all the specimens in the collection the attention they deserve. Should any more be procured and sub-

mitted to me, I shall endeavor to furnish a report that will include not only them but those of last year's collection, which have not yet been described. It would be well for the progress of geology if all explorers would take as much care in preserving the localities of their specimens as you have done, because it enables us to fix with certainty the geographical position of the outcrops of the formations. A few such points well established here and there throughout a large region such as that of the North-west, are in effect so many lengthened strides towards the determination of the structure of the whole area.

I have the honor to be,
Your very obedient servant
E. BILLINGS.

S. J. Dawson, Esq.,
Engineer in command of the
Red River Expedition,
Red River Settlement.

In the foregoing very valuable article it will be seen that Mr. Billings says:—"If the true coal measures exist at all in that part of the country, they will be found between the western edge of the silurian belt and a line passing through a point 150 miles west of Fort Garry, and running north-west and south-east." And recommends that this intermediate belt between the silurian and cretaceous formations should be submitted to a very careful geological investigation. Now, as I have before stated, the Indians report coal on the Duck Mountain, Thunder Mountain, and on Red Deer River, precisely in the tract which is recommended for investigation. On the Duck Mountain, especially, they say it exists in place and in large quantities. I think, therefore, that it would be advisable that a practical geologist should accompany the expedition next summer, it would add but little to the cost, while it would lead to the determination of a question of the highest importance. Sir William Logan, as I have stated in a previous communication, would willingly send with us a gentleman in every way qualified for the task, and has mentioned Mr. Richardson whose researches have already led to most important scientific results.

ADAPTABILITY OF THE REGION WEST OF RED RIVER FOR SETTLEMENT.

It is sometimes supposed by those who have not travelled on the prairies, that they present the appearance of a vast green lawn which the ploughshare could penetrate with ease, and in many places this is the case, but it is by no means generally so. The richest lands are often matted with roots, burrowed with holes, and sometimes hummocky and uneven. A constant war seems to be maintained between the fire and the forest, and where a prairie has been recently burned, two or three yoke of oxen might draw a plough with comparative ease, but where saplings have taken root a little preparatory work would be necessary. This is more particularly the case on the verge of the forests, although even there considerable spaces are sometimes met with without a tree or shrub of any kind. Once brought under cultivation, the prairie lands have the advantage of being free from stumps which so much embarrass the labours of the agriculturist in the new settlements of Canada. Another great advantage in settling in a prairie region, as compared with a country entirely wooded, is that cattle and horses may be at once introduced in any number, as hay and pasturage may be had to an unlimited extent. But for the little prairie wolves which infest the whole country, sheep might be introduced with profit, and, doubtless, as settlement advances the wolves will disappear.

I would here invite particular attention to the following remarks by A. J. Russell, Esq., of Ottawa. From these it will be seen how easy it is for a poor settler to establish himself in a country such as I have described, as compared to the difficulties which encompass him in the forest. Mr. Russell's long experience in these matters renders his opinions of the highest value.

His remarks are as follows:

"That part of our great western territory watered by the Red River and the Assiniboine, and lying between these rivers and Lake Winnipeg, as exhibited by the exploration of last spring, is of a character calculated to render it highly interesting to the public generally. Its value, however, as a field for colonization can be duly appreciated only by those who have a practical knowledge of the formation of new settlements.

"Though but a fraction of our western territory, it exceeds Great Britain in area, as it also apparently does in the fertility and general arableness of its soil. Possessing a climate equal on the average to that of the settled parts of Canada, it is evidently capable of sustaining in comfort millions of inhabitants. From its vast prairies in the south to the wooded part of it in the north-east, around and between its lakes, it presents a very desirable variety of prairie and woodlands; and to a very great extent that combination of them which offers to the settler the peculiar advantages of both, free from the disadvantages arising from the exclusive prevalence of either.

"Very important also is the great system of inland water communication of which the territory mentioned includes the central and most important part. Not only the four hundred miles of the navigable course of the Red River, falling into the south end of Lake Winnipeg, and almost connecting with the navigable waters of the Mississippi, and the four hundred miles, or probably double that extent, of the Saskatchewan falling into the north end of Lake Winnipeg (which exceeds Lake Erie in extent.) But, more particularly as regards this territory, the great interior system of water communication consisting of Lakes Manitouba and Winnipegoos, with their connecting waters, lying parallel to Lake Winnipeg and in continuous navigable connection with it, presenting by it and Red River an uninterrupted line of navigation from the northern extremity of this territory down into the heart of the State of Minnesota.

"Apart from the present advantage of these inland water systems as inlets for settlement, the physical geographer will at once recognise in them elements which, in accordance with all past experience, must render this region the most important in the northern interior part of the continent.

"The chief peculiar advantage which this territory presents as a field for settlement, lies in the combination it offers of prairie and woodlands. The full value of this advantage can be appreciated only by those who have had practical experience of the great and continued labor required to clear off and cultivate a new farm in a wooded country, and the obstruction it presents to the making of the roads necessary for the formation of new settlements.

"Much is said of the advantage of the superior supply of wood for fuel and fencing, afforded by wooded countries; but these are indefinitely over-estimated by many, in comparing the facilities for settlement offered by prairie lands and wooded countries respectively; such a comparison can be best approximated by reducing the matter to figures as far as possible.

"In some respects this will be easily done. Some of the difficulties presented by woodlands are very tangible, and the cost they occasion is well known, and by enumerating them on the one side of the account of comparison, we shall be better able to see how far, on the other hand, the superior facility of obtaining wood for fuel and fencing will go to balance the expense or lost labor they occasion.

"The first and most obvious cause of expense, in money, or labor is the necessity of clearing off the wood before the land can be even imperfectly cultivated, the average cost of which is three pounds five shillings an acre, but as the stumps still remain, an outlay of twenty-five shillings an acre may be set down as to be incurred afterwards in getting rid of them. Where the stumps are of pine or the land stony, the cost will be much greater.

"In general, pine stumps, if removed at all, will cost at least five shillings a piece, and some will cost twenty-five shillings.

"We have here as one item, at least four pounds ten shillings an acre of expense, to be incurred on account of the wood before the land can be brought thoroughly under the plough. This is the cost to those who can pay for the labor of skilled back-

woodsmen, accustomed to the use of the axe, who can do twice as much of that kind of work as the emigrants from Europe, even though accustomed to other kinds of hard labor. To the farm labourer from Great Britain, whose time and industry, if applied to the cultivation of prairie land, would be even more valuable than that of the backwoodsman, the cost of clearing woodland in money's worth of his labor will be twice as much. If he be very young he may learn the use of the axe perfectly; if not, he will never learn to use it so as to be able to do as much work with it as the native backwoodsman.

"As by far the greater part of the emigrants who settle in the woods have to clear their farms by their own unskilled labor, admitting even that they become gradually more proficient, the cost to them, in their own labor, of clearing their farms and removing the stumps may, on a low estimate, be set down at five pounds ten shillings an acre. I do not here speak of the value which their labour in clearing would command. No one would give them such a price for it. I am speaking of the value of the labor unavoidably lost by them on account of the woods.

"Here we have then, to a family clearing a farm of a hundred acres in ten or fifteen years, a loss of five hundred and fifty pounds on account of the woods.

"The settler expends all this, and ten or fifteen years of the best of his life, in toilsome struggles to convert his farm into such proportions of open and wooded land as the settler on the partly wooded prairie lands finds his when first he goes to it. The latter can adopt a regular system of cultivation ten years sooner than the other. He can put as much land under the plough, and reap the fruit of it soon after commencing, as the former can do after ten or fifteen years of crushing toil in clearing land, which necessarily consumed much time which he would gladly have devoted to more extensive cultivation, and raising larger crops, had the woods not been an obstruction to his doing so. It is true he has had plenty of wood for fuel and fencing during the interval, so much so that he has had to burn up twenty times as much as he was able to use in any form. But it would be in the utmost degree absurd to suppose that he has benefitted thereby to the value of five hundred and fifty pounds beyond the settler on the prairie lands, for he, also, has had wood enough to serve his purposes, though he has not been affected with such abundance of it, and has had, perhaps, a greater distance to draw it.

"It must be borne in mind, however, that settlers, in a great part of the country under consideration, in the partly wooded regions, and near the streams where a luxuriant growth of wood extends, sometimes a mile, or even two miles in depth along them, would enjoy every advantage of a wooded country.

"To recur to the labor of clearing land, I have already explained that it is twice as great to the inexperienced, even though accustomed to other kinds of hard labor, as to the native backwoodsman. But how is it with the emigrant who has never been inured to labor, the unfortunate man of business, or professional man, the man who has lived hitherto in bodily ease by some sedentary occupation, and is perhaps advanced in life, but is forced by necessity to make a home in the backwoods? How does he get along with the heavy woods? When he goes up to attempt to fell a heavy tree, as thick as a hogshead, and as tall as a steeple, his heart must sink within him. He can make no more impression on it than a child, but yet it and others must be cleared away before he can raise the barest sustenance for himself and family. To him the clearing of a farm is painful and tedious toil, requiring the exercise of the utmost fortitude. What a relief it would be to him to be transported to a prairie settlement, near the banks of some wooded stream. How light the toil of raising the necessaries of life would be when relieved from the heavy additional labour of clearing the forest.

"Is it at all surprising then that so many European emigrants should pass through Canada to seek the prairie lands of the United States, where they can proceed at once with the regular cultivation of the land, in which many of them are well skilled, without undergoing the protracted toil of clearing land, to which they are unaccustomed? Even old and successful settlers in Canada have, to my personal knowledge, found it much to their advantage to do so.

"And would it not be desirable that our own prairie lands should be thrown open to them by the establishment of an efficient line of communication, and by the commencement of the organization and survey of lands for sale and settlement within the territory under consideration?

"But there is another heavy charge to enter in the account of comparison against settlement in wooded countries. That is the obstruction our dense forests present to the spread of settlement, and the expense that has to be incurred in making roads through them.

"We have abundance of vacant fertile lands, but how difficult it is to get at them, and who can doubt that they would be rapidly settled upon if it were not for the want of roads through the forest to let the settlers in. It takes an expenditure of more than a hundred pounds a mile to make a road through the woods as passable as the natural surface of the prairie by the innumerable routes it offers; and, when a hundred pounds a mile is spent in making a road through our forests, it gives access only to the land immediately on the sides of it. The moment the settlers strike from it to reach lands in the back concessions the obstacle is again encountered, and the expense of opening the roads commences anew. It is a moderate calculation to say that for every square mile of forest country settled, an expense in money or labor of £100 has to be incurred ultimately in making roads, or, what is worse, the settlers have to endure, in hardship and difficulty of communication, a much greater loss from the want of them.

"Here again the practical man only can duly appreciate the magnitude of the obstacle and the expense it entails; I speak from having been engaged in spending about forty thousand pounds in making roads through wooded countries.

"The facts I have mentioned may assist in showing more definitely the loss, or cost of the obstruction, which the forests in wooded countries entail upon the settler, in comparison with which the value of the difference of facility in obtaining wood for fuel and fencing, will be found to be insignificant where such difference does exist, which it evidently does not in a great part of the mixed prairie and woodlands of the territory under consideration. It is obvious, therefore, that this difference does not in any considerable degree balance the superior advantages presented by the prairie lands for immediate and extensive cultivation, with freedom from heavy and difficult labor in clearing the land.

"But the difficulty of access to this territory may be mentioned as an offset to the facilities which it offers to settlers. The briefest consideration, however, will make it apparent that the cost to settlers of getting into it, even by ordinary land travel, would form but a small part of the five hundred and fifty pounds to be sunk, as already mentioned, in the additional toil of clearing even a small farm in a wooded country.

"But it may be said that the territory is remote, and that the expense of opening a line of communication, partly by ordinary land roads, to connect the navigable waters available, and partly by improving the latter, through such an extent of uninhabited, and partly uninhabitable, country would be so great, compared with the cost of opening up our unoccupied territories much nearer home, as to be a serious objection on the score of economy against the settlement of the country.

"Now, far from this being true, the very reverse is the case, and the fact of its being so is one of the strongest points in favor of this territory. As to our unoccupied lands near home, their capacity is insignificant as compared with that of this region. Two-thirds of their extent at least are unfit for settlement, and a great part of the remaining third is far inferior in fertility.

From the obstruction which their wooded character, as before explained, presents to road making, it will take ten times the outlay in roads, either by Government or the settlers, to render the available lands they contain accessible for settlement, that would be required to open a communication with Red River.

And that place once touched the whole of our western prairie territories, from their open character, would be as accessible as would our forest lands nearer home if covered with a continuous net-work of colonization roads.

"The only objection of any importance whatever which can be adduced against this territory, as an advantageous field for immediate settlement, is its remoteness from any market for its produce. This is an objection which no practical man could overlook. It happens, however, that its value can be ascertained with tolerable accuracy by measurement upon the map. By that it will be seen that this territory is as near the navigable waters of the St. Lawrence (Lake Superior), as the less fertile, and worse wooded and watered territories of the United States, now proposed to be opened for settlement with sanguine prospects of success, are to Milwaukie and Chicago.

"Doubtless the same inducements will operate in favor of both, viz: the facilities for immediate and extensive cultivation, the absence of the profitless toil of the mere clearing of land, and the consequent opportunity of living an easier life, which is already in some degree observable in the small settlement of Red River.

"There is another objection to the immediate settlement of this territory, which seems invariably entertained, though groundless; that is, the assumption that it cannot be colonized successfully till the intermediate unoccupied regions north of Lakes Huron and Superior be filled up.

"With the great mass of experience before us, which we have on such matters, it is very singular that this objection should be considered of any importance.

"The unoccupied region north of Lakes Huron and Superior can as little affect the settlement of the Red River country as the thousand miles of the uninhabited shores of the St. Lawrence and Gulf affected the first settlement of Lower Canada. On a smaller scale we have had many similar instances since. The first settlement of the Eastern Townships; that of the Madawaska, on the River St. John; as well as the first settlements on the Ottawa, at Hull, &c.; and we might almost quote that of the interior Saguenay. All took place while there was no settlement for a great distance between them and the occupied parts of the Province. And, in the United States, we might cite the first settlement beyond the Alleghanies, with the fearful addition of Indian wars; and, far more conclusively, the overland emigration to Utah and Oregon, through regions more dangerous and inhospitable, and so much more remote, that our Red River settlement is merely the first station on what is now believed to be a more favorable route from the East to the West than that by which these emigrations took place."

A. J. RUSSELL.

REMARKS ON THE CLIMATE.

The climate of the Red River Settlement will compare not unfavorably with that of Kingston, Canada West. The spring generally opens somewhat earlier, and agricultural operations may be commenced sooner than at Kingston, but owing to the proximity of Lake Winnipeg, which is late of breaking up, the weather is always variable until the middle of May. The slightest breeze from the north-west, blowing over the frozen surface of that inland sea, has an immediate effect on the temperature. On the other hand, the fall is generally open, with mild, dry and pleasant weather. Last year the ice began to move on Red River on the 31st of March, and ploughing was commenced in the settlement on the 9th of April.

In the fall of 1857 the Red River froze over on the 9th of November, and it could be crossed on foot on the 16th, and this was said to be somewhat earlier than usual. The winter was mild throughout, except about the middle of February, when, as will be seen by the register, the thermometer indicated—37 ° Fah., but only on one occasion. The greatest average depth of snow on the prairies did not exceed one foot, while in the wooded region to the eastward near the Lake of the Woods, it might be about 1 foot 4 inches. The snow on the prairies evaporates even in cold weather with amazing rapidity, and with the first warm weather in the Spring it entirely disappears.

Cattle are seldom housed, but are commonly driven to the shelter of some wood, and left to forage for themselves, except in severe weather, when they are supplied with hay.

The winter which I spent in Red River Settlement may have been an unusually mild one, but that such winters are not unfrequent may be inferred from the following evidence given by Colonel Crofton, before a Committee of the House of Commons appointed to investigate the claims of the Hudson's Bay Company:—

Question 3197. (Mr. Roebuck).—Can you tell me when the spring or summer there (in the Red River Settlement) begins? The season opens about the first week in April, and closes about the middle of November; that is to say, the rivers, lakes and swamps freeze in the middle of November.

3198. That is about what occurs in Lower Canada?—I thought it was about that of Upper Canada; I may be wrong.

3199. Does the summer season close as early as the middle of November?—The summer season may be said to close in August, but the finest weather is what is called the fall, which extends from August to the middle of November.

3200. When does the permanent snow fall?—It commences in the latter part of November, and is not off the ground until the first week in April.

3201. Had you an opportunity of seeing any agriculture when you were there?—A great deal.

3202. What sort of crops did they grow?—Oats, barley, and wheat, chiefly, but all sorts of vegetables.

3203. Did the wheat ripen?—In 90 days from sowing.

3204. It ripened very perfectly? It was the finest wheat I ever saw.

3205. Was the soil fertile? Along the immediate banks of the rivers, and extending for, perhaps, the breadth of two miles, no finer loamy soil could be seen, with a limestone foundation.

3206. Is it geologically limestone?—All.

3207. And wherever limestone is, there is fertile land, is not there?—I think that is the consequence.

3208. Do you know how far the limestone extends; looking at that map? I have ascertained from servants of the Hudson's Bay Company that it extends, as a base of the whole prairie land, to the Rocky Mountains.

3209. So that, in fact, that part of the territory is fit for agriculture? Quite so.

3210. And would make a good colony?—It might maintain millions.

According to the Isothermal charts of Lorin Blodget, the lines of equal temperature for the summer should have a north-west direction from Red River. Now, admitting this theory to be correct, the climate of Red Deer River and Swan River, other circumstances being the same, should be equal to that of the Red River Settlement. But I am of opinion that it is superior, inasmuch as that these rich valleys, while they are at but a very slight elevation above the valley of Red River, are removed from the influence of the cold winds from Lake Winnipeg, which prejudicially affect the latter in the spring. As an instance of the change of climate which is produced by the difference of elevation in this region, I may mention that the vegetation, in the middle of June, was much further advanced in the valley of Swan River than at Fort Pelly, which is some distance further to the south, but at a greater altitude by some 400 feet.

While on this subject, I quote from Blodget's climatology some of his remarks on the climate of the north-west territories, which I am confident will be read with interest.

"By reference to the illustration of the distribution of heat we see that the cold at the north of the great lakes does not represent the same latitude further west, and that beyond them the thermal lines rise as high in latitude, in most cases, as at the west of Europe. Central Russia, the Baltic districts and the British Islands, are all reproduced in the general structure, though the exceptions here fall against the advantage, while there they favor it, through the immediate influence of the Gulf Stream.

"Climate is undisputably the decisive condition, and when

we find the isothermal of 60° for the summer rising on the interior American plains to the 61st parallel, or fully as high as its average position for Europe, it is impossible to doubt the existence of favorable climates over vast areas now unoccupied.

"This favorable comparison may be traced for the winter also, and in the averages for the year. The exceptional cold of the mountain plateaus, and of the coast below the 43rd parallel, masks the advantage more or less to those who approach these areas from the western part of the Central States, and from the coast of California; but though the distinct mountain ranges remain high at the north, the width of their base, or of the plateau from which they rise, is much less than at the 42nd parallel. The elevated tracts are of less extent, and the proportion of cultivable surface is far greater.

"It will be seen that the thermal lines for each season are thrown northward further on passing Lake Superior westward, in the charts of this work, than in those of the military report prepared by the author. At the time those were drawn the number of the observations beyond the limits of the United States were so small that the full expression was not given to the statistics then used, in the fear that some correction would ultimately be found to apply to them, reducing the extreme northward curvatures they indicated. But a further collection and comparison warrants the position now given to the thermal lines, placing them further northward than before, and extending them in a course due north-west from Lake Superior to the 58th parallel. For the extreme seasons, winter and summer, this accurate diagonal extension of the thermal lines across the areas of latitude and longitude is very striking. The buffalo winter in the upper Arthabasca, at least as safely as in the latitude of St. Paul's, Minnesota; *and the spring opens at nearly the same time along the immense line of plains from St. Paul's to McKenzie's River.*

"The quantity of rain is not less important than the measure of heat to all purposes of occupation; and for the plains east of the Rocky Mountains there may reasonably be some doubt as to the sufficiency; and doubts on the point whether the desert belt of lower latitudes is prolonged to the northern limit of the plains. If the lower deserts are due to the altitude and mass of the mountains simply, it would be natural to infer their existence along the whole line, where the Rocky Mountains run parallel, and retain their altitude; but the dry areas are evidently due to other causes primarily, *and they are not found above the 47th parallel in fact.* It is decisive of the general question of the sufficiency of rain, to find the entire surface of the upper plains either well grassed or well wooded; and recent information on these points almost warrants the assertion that there are no barren tracts of consequence after we pass the bad lands, and the coteaus of the Missouri. Many portions of these plains are known to be peculiarly rich in grasses; and probably the finest tracts lie along the eastern base of the mountains, in positions corresponding to the most desert-like of the plains at the south. The higher latitudes certainly differ widely from the plains which stretch from the Platte southward to the Llano Estacado of Texas, and none of the references made to them by residents or travellers indicate desert characteristics. Buffalo are far more abundant on the northern plains, and they remain through the winter at their extreme border, taking shelter in the belts of woodland on the upper Athabasca and Peace Rivers. Grassy savannas like these necessarily imply an adequate supply of rain; and there can be no doubt that the correspondence with the European plains in like geographical position,—those of eastern Germany and Russia,—is quite complete in this respect. If a difference exists, it is in favor of the American plains, which have a greater proportion of surface waters, both as lakes and rivers."

After remarking on the region west of the Rocky Mountains, he goes on to say—

"Next is the area of the plains east of the Rocky Mountains, not less remarkable than the first for the absence of attention heretofore given to its intrinsic value as a productive and cultivable region, within easy reach of emigration. This is a wedge shaped tract, ten degrees of longitude in width at its base along the 47th parallel, inclined north-westward to conform to the trend of the Rocky Mountains, and terminating not far from the 60th parallel in a narrow line, which still extends along the Mackenzie for three or four degrees of latitude, in a climate barely tolerable. Lord Selkirk began his efforts at colonization here* as early as 1805, and from personal knowledge he then claimed for this tract a capacity to support thirty millions of inhabitants. All the grains of the cool temperate latitudes are produced abundantly—Indian corn may be grown on both branches of the Saskatchewan, and the grass of the plains is singularly abundant and rich. Not only in the earliest exploration of these plains, but now, they are the great resort for buffalo herds, which with the domestic herds, and the horses of the Indians and the colonists remain on them and at their woodland borders throughout the year.

The simple fact of the presence of these vast herds of wild cattle on plains at so high a latitude, is ample proof of the climatological and productive capacity of the country. *Of these plains, and their woodland borders, the valuable surface measures fully five hundred thousand square miles.*"

To the above I may add, that the talented author in his isothermal chart, shewing the mean distribution of heat for the summer, places the line of 60° to the north of the Lake of the Woods, and that of 65° at Fort Garry. The same authority gives a summer of 95 days to Toronto, and of 90 to Cumberland House, in latitude 54° north, the extreme northern limit of the region to which my descriptions refer.

On proceeding to the south-eastward from Red River, the climate gradually becomes colder and more rainy. That a great precipitation of rain takes place at and near the high lands, which separate the waters flowing to Lake Winnipeg from those which run towards Lake Superior, is evinced by the magnitude of the rivers, as compared with the area which they drain. The climate, however, seems to be milder on the western slope of these high lands than on the eastern.

On the 12th and 13th of September we passed from Lac des Mille Lacs to Dog River, and found a marked difference in the progress of the season, notwithstanding the shortness of the distance. At Mille Lacs the tender foliage of the poplars near the water had just begun to change, but the woods in their general aspect were as green as in summer; while on Dog River, the rich tints of autumn appeared on the hill sides, and the rustle of falling leaves indicated how severe the weather had been on the eastern, as compared with the western declivity.

In closing my remarks on the climate, I would say that, as a general rule, the season during which agricultural operations can be carried on at Red River, is somewhat longer than in Canada, east of Kingston, while in winter the cold is more intense, although not uniformly so, than in any part of Canada west of Three Rivers. In regard to salubrity, there are no diseases, so far as I could learn, incidental to the country. Ague is unknown, and a population more healthy than that of the Red River Settlement cannot be met with anywhere.

THE RED RIVER SETTLEMENT.

So much has been written in respect to this settlement, that I need notice it but very briefly. In doing so, however, I shall endeavour to correct some misapprehension respecting the people of mixed origin, which might arise from the accounts disseminated regarding them.

The settlement commences about ten miles above Lake Winnipeg, and extends to the south for some fifty miles along the Red River, and to the westward for about seventy miles on the Assiniboine, there being, however, a long interval on the latter river, between the White Horse Plains and the Prairie Portage without any settlers. The population, by a census taken three years ago, was seven thousand, but including the settlers at the Prairie Portage, and the people who mostly live about Red River, without any fixed habitation, it may now amount to some ten thousand individuals.

The inhabitants of the lower section are mostly Indians, those

*At the Red River Settlement near the 50th parallel.

of the middle part chiefly retired traders and voyageurs, or descendants of the first Scotch settlers brought out by Lord Selkirk; while the upper part is almost exclusively peopled by a race of mixed origin, descended from the French Canadian voyageurs, and the native Indians.

That the settlement should have advanced but slowly is not to be wondered at, considering how far removed it is from the civilized world, but still there has been progress, and that of a most pleasing and satisfactory description, and I question if at this moment it would not compare favorably with any rural settlement of equal extent in Canada.

The people of mixed origin are generally leaving the customs of their Indian ancestry, and adopting the habits of civilised life. The Indians, in their part of the settlement, have built themselves houses, and cultivate the land. They send their children to school, and have embraced Christianity, to the observances of which they are singularly attentive. The people of unmixed European descent have excellent houses, and good farms, with horses, sheep, and herds of cattle.

In the settlement altogether, there are two libraries, nine churches, and eighteen schools. Of the Churches, five are Episcopalian, three Roman Catholic, and one Presbyterian. Of the schools, four are for the instruction of females, one of these at St. Cross being under the immediate patronage of His Lordship the Bishop of Rupert's Land, and there young ladies are instructed in French, Music and all the branches of education which it is usually thought necessary for them to acquire.

The Grey Nuns have a large establishment just opposite to the mouth of the Assiniboine, and another, a smaller one, at the White Horse Plains. These ladies devote themselves chiefly to the instruction of the children of mixed Canadian and Indian origin, and the effects of their zeal, piety, and unfailing industry are manifest in the social improvement of the race, for whose benefit they are content to lead a life of toil and privation.

There is still another school for the instruction of young ladies at the rapids, and I was informed that it, also, was an excellent establishment, under the direction of an accomplished lady from England.

At the collegiate school established by the Bishop of Rupert's Land, the higher branches of education are taught, and some of the young gentlemen of the settlement instructed there, have subsequently distinguished themselves in other lands, winning the highest degrees at Cambridge and elsewhere.

In the event of the communication being opened up to Red River, it will be a matter of no small importance to those who seek that remote region to know that establishments exist, where their children may have the advantage of an education scarcely inferior to what they might obtain in any country.

The demand for agricultural produce in the Red River Settlement being, of necessity, limited to the requirements of the fur trade, farming is not practised to that extent which it would otherwise be. And, if the settlers in a measure neglect this branch of industry, it is not fairly attributable to indolence of disposition so much as to absolute want of inducement.

In reference more especially to the population of mixed origin, or, as they are usually called, half-breeds, when it is considered that they are the descendants of hunters and voyageurs, that their fathers either lived by the chase or led a life of roving and adventure, the wonder will be that they have settled down so quietly, and evince such a tendency to exchange the wild freedom of Indian life for the dulness of a settled home and the quiet humanities of civilization.

As they live at present they generally grow enough for their own use, and they are possessed of cattle, sheep, and horses which demand some measure of attention; but they have also their hunting seasons, and after the crops are sown in spring, and when they are harvested in the fall, they form into bands and seek the pleasures and the dangers of the chase. Generally, they go southwestward to the plains of the Cheyenne or the Coteaus of the Missouri. In these long marches they are regularly organized, under the direction of officers duly elected to command. On seeing the buffalo, which usually go in large herds, they form into line and ride on at a hand gallop, until, at a word given by their leader, they dash forward among the bewildered animals, firing and loading from on horseback, with the most amazing rapidity. Sometimes the bulls give battle, and it not unfrequently happens that horse and rider are rolled on the ground. They have, however, more terrible enemies to encounter in the Sioux Indians, who hang on their path, with the view of possessing themselves of the scalp of any unfortunate straggler who happens to separate from the main party. They used formerly to have frequent encounters with these savages, but of late years the Sioux have learned to fear their sure aim and determined spirit, and confine themselves to such attacks as involve but little risk on their part, although they are annoying to the hunters, and compel them to be continually on their guard.

A successful hunt enables the settlers to live in comfort and abundance during the winter, and I doubt if they will relinquish the practice, or lose their fondness for the chase, until the buffalo have entirely disappeared. But this, I think, by no means evinces an indifference to the advantages of civilization. Formerly they lived entirely by the chase; now they follow it as affording an agreeable occupation, and an adjunct to their means of subsistence. With the produce of their farms they could not always obtain clothing, or the little articles of luxury, such as tea and tobacco, which are indispensable even to them; but with pemican and Buffalo meat they can, for these are always in demand at the Hudson's Bay Company's stores; so that hunting, after all, is a necessity of their situation as much as a passion. But even if it were the latter, that is that they could not resist the temptation; make the circumstances equal, and I question if they would be found to differ much in this respect from more civilized communities. And I doubt whether there is a community so sedate, as to deny themselves the pleasure of shooting the wild cattle of the plains, if they were roaming by thousands within a few days' march of their dwellings, even if the pastime were attended with a little peril.

In physical appearance the half-breeds are far superior to either of the races to which they are allied. Among the *habitants* of Lower Canada they would look like a race of giants, and they are much more robust and muscular than the neighboring Indians. This is due, in a measure, no doubt, to their leading a life peculiarly favorable to the development of the human frame; to the nutritious food which they use, and the extreme salubrity of the climate in which they live. Physiologists might perhaps find other causes; but, be that as it may, they are a hardy, vigorous and active race.

In regard to the social condition of the settlement, crime is scarcely known, the only serious case which occurred, during my residence there, being that of a man who killed and appropriated to himself a cow, an offence, combined with the perpetration of which there were concomitant circumstances, which occasioned him to be imprisoned for six months.

The influence of the Missionaries, whether Protestant or Roman Catholic, is everywhere observable in the moral tone which pervades the community. During our residence in the settlement and on our exploratory excursions I employed many of the half-breeds, and was thrown of necessity so much among them that I had good opportunities of observing their character, and it is much to their credit and that of their instructors that I am able to say, that I never once heard an oath or an indelicate expression made use of among them. This is different from what may be too often observed among the lower orders of other communities. But with their good qualities they combine some others which are not so agreeable. In disposition they are proud, exceedingly sensitive, and ready to take offence. They will do anything to oblige, and fly to anticipate one's wants, but an order sternly given excites hostility at once. They are as volatile as children, and, if offended, would care little for marching off and depending on their guns for subsistance if they were even five hundred miles from their homes. Some of my assistants, who were young men, and did not trouble themselves much about the character and disposition of those who were under their command, had extreme difficulty in managing them; indeed, on one occasion, they were almost completely deserted, but for my own part I never had the

slightest trouble or difficulty with them. Apart from the defects just mentioned, they are respectful to their superiors, and generally set about doing what is required of them with the greatest alacrity and enthusiasm. Active, however, as they are, they do not like continuous labour, and in travelling in the west, if I had the organization of a party, I would choose about an equal number of half-breeds and French Canadian voyageurs.

That the settlement is not retrograding but advancing, and that, far from falling back to the habits of their Indian ancestry, the people are rapidly improving in their social condition, may be gathered from the following remarks of the Bishop of Rupert's Land in his "Notes of the Flood." After remarking on the immediate distress which the flood had caused, his Lordship says:—

"Taking it, however, in another light, and asking how will the flood be felt? and the answer is very different. The distress will, we think, be small, compared with that on the former occasion. Much has been taken, but much more has been left. We arise from the flood in a very different condition from before. The settlement was then in its infancy, there were but few cattle; a single boat is said to have transported all in the Middle District in one forenoon. Now, each settler of a better stamp has a large stock of cattle: the one whose record of the first flood we had read at home had then but one cow; he has now, after all his losses in other ways, fifty or sixty head of cattle. Before, too, there was but little grain, and the pressure of want was felt even when the waters were rising. Their dependence throughout was on the scanty supply of fish, or what might be procured by the gun. Now, there is a large amount of grain in private hands, and, even with the deduction of the land which is this year rendered useless, a far larger number of acres under cultivation. In this light it is comparatively less severe: the whole of the cultivated land was then under water: nearly all the houses were carried off by it. It was, as many have called it, a cleaner sweep but there were then few houses or farms below the Middle Church, or on the Assiniboine above the Upper Fort. The districts of the Rapids and Indian Settlement were still in the wildness of nature.

"Though there is, therefore, greater suffering and loss, there is greater elasticity and power to bear, and larger means to meet it."

"*All this may be attributed to the progress of civilisation, and the advancement of the people, in the interval.* Of this, a single visit to any of the encampments might have afforded sufficient proof. Instead of the bare, unfurnished tent, there was one supplied with every necessary, and generally with the stove to afford its warmth, with a large stock of domestic cattle feeding around.

"There was cooking, baking, and churning going on. Boat after boat was required to carry off the property; whereas before, nearly all might have been carried on their persons. The return, too, seems more hopeful. Before, a large number left, of those unattached to the soil, without any tie to their country. In the interval, a large population has sprung up, who are by birth bound to the land, and look to it as their home. Many are so connected that they feel it impossible to leave. Their family ties are here, the family branches are spread over the land, and root themselves in its very soil. Now to this we look as the strength and sinew of the country: a population contented and happy, I had almost said, proud of their land. The increased facilities of intercourse are also adding to this gradual improvement. To be brought more before the eye of others will inevitably have a beneficial tendency. The flood of 1852 will occupy a far larger space in the public mind than that of 1826. Instead of a few solitary settlers, unknown and almost forgotten by their fellow-men, they are now parts of a mighty system, linked more closely by sympathy and interest to other lands."

The importance of the Red River Settlement will not fail to strike those who have considered the subject of colonizing the region to the west thereof. Here is already a nucleus where the wants of settlers may be supplied in the first instance, and a population of ten thousand ready to welcome them and give them the advantage of their experience. At present, it is true, that the people raise but little more than suffices for their own wants, but let a demand arise and agriculture would soon be extended, and would continue to extend as that demand increased. To appreciate the full value of this little colony, it needs but to be considered how vastly the difficulty of introducing settlement would be enhanced if it were not there.

THE HUDSON'S BAY COMPANY'S ESTABLISHMENTS.

These cannot be passed over without some notice, in a description of the territory where they exercise so great an influence. In noticing them, however, I shall confine my remarks to what was open to observation, without reference to the political questions with which they may be associated, or the extent or nature of the trade which is carried on, as these are subjects beyond the scope of our instructions, and as, moreover, we could not with any degree of propriety have pried into the affairs of a Company, whose establishments were thrown perfectly open to us, and whose hospitality we so often experienced.

The first place of any consequence on the line of route is Fort William, at the mouth of the Kaministaquia, an establishment which derives peculiar interest from its having been at one period the great emporium of the North-west Company of Canada. At one time as many as three thousand people were sometimes assembled there, with rich loads of peltries from the interior, or merchandise from Montreal, but, since the amalgamation of the Companies, the trade of the interior has been diverted to Hudson's Bay, and Fort William has lost much of its importance. It is now the residence of a chief trader, and is still the centre of a considerable traffic in summer, Mr. McIntyre, the gentleman in charge, having established fisheries which afford employment to a number of people of mixed origin, who have settled a little higher up on the Kaministaquia. To Mr. McIntyre the various branches of the expedition have been repeatedly indebted, not only for his kind welcome and hospitality, but for his readiness in supplying canoes and much of the material requisite for the journey across the country to Red River, and, latterly, he has done what lay in his power to aid the mail contractors in forwarding the mails to Fort Garry.

Fort Frances, the next establishment on the route, is situated at Rainy Falls, in the very heart of the Saulteux country, but it does not seem now to be a place of so great importance as it doubtless was when the trade of the interior passed that way. The officers at this post, Mr. Pether, Mr. Chatelains, and others, were always very kind and obliging.

The next post is at Rat Portage, but it is quite a small establishment as compared with the others.

Fort Alexander, at the mouth of the Winnipeg, the next in order, is the residence of a chief factor, but the trade to which it once owed its importance is now, I believe, diverted to Red River.

The Stone Fort, or Lower Fort Garry, on the Red River, is by far the finest establishment in the territory. A square area of some six acres in extent is enclosed with walls and bastions of stone. Within this enclosure are the Company's buildings, all of them most substantial edifices of stone. The stores are situated on either side, and in the centre stands the residence of the officers, a very imposing building, with verandahs running completely round it, and grounds in front laid off and planted with great taste. This establishment is in charge of Mr. Lilly, a young gentleman from Scotland, who, in addition to his duties as a trader, carries on extensive farming operations. Last spring he brought a considerable extent of new land under cultivation.

Upper Fort Garry, situated at the confluence of the Red River and Assiniboine, is a similar establishment, except that the space enclosed is not quite so large, and that there are a greater number of buildings. This is the residence of the chief factor of the district and Governor of Assiniboine. Here, also, the military are quartered. It is the principal commercial empo-

rium of the settlement, and people of all shades, from the dusky Indian of the plains, to the fair complexioned native of the Hebrides, may be constantly seen thronging about the gates.

Besides the establishments above enumerated, we visited Pembina, Fort Ellice, Fort Pelly, and Swan River House, but reference has been made to all of these in previous reports.

On reflecting that since the amalgamation of the North-west Company of Canada with the Hudson's Bay Company, when they became one under the latter title, such establishments have gradually spread over half a continent, from Hudson's Bay to the Pacific, and from the boundary line to the Arctic seas, it is impossible not to admire the order and system which are everywhere observable in their management. It is a vast system of economy, carried out with the utmost sagacity and foresight in all its details; and a system, too, which seems to work equally well under circumstances widely different. In the back settlements of Canada, on the stormy shores of Labrador, among the warring tribes of the plains, or in the frozen regions of the north, it seems to be alike successful.

An organization so perfect can only be traced to the agency of superior management, and I am of opinion that the success of the united Companies is as much due to the high talent of the officers who have the direction of their affairs, as to other circumstances to which it is more frequently attributed; and there can be no doubt that the same judgment, care, and economy brought to bear on any pursuit, would meet with a very marked measure of success.

THE NATIVE INDIANS.—WHETHER THEY WOULD BE LIKELY TO OPPOSE COLONIZATION, &c.

In considering the project of colonizing the region to the west of Red River, the question naturally suggests itself as to whether settlement would be likely to be opposed by the native population, and whether if opposition arose, it would be of a formidable character.

Settlement would in the first instance spread over the territory which, with a soil well adapted for its development, was at the same time the most easy of access; and, in this respect, the valley of the Assiniboine, and the country bordering on the Manitomba and Winnipegoos Lakes, and their various feeders, would be the first to fill up; and throughout the greater part of this extensive region, even in its present state, a settler would be as safe as in the backwoods of Canada. The Assiniboine in one part of its course, that is, between the Rapid River and Brandon House, touches on the Sioux country, but upon the whole I think, with respect to this, the only part of the country under consideration where there is any danger of molestation from Indians, the accounts of their power and disposition to do harm are very much exaggerated. Taking the region to which my descriptions more particularly refer, the Indians are not more numerous than they are in some other parts of Canada, and with ordinary precaution no danger need be apprehended from them. Farther to the west, on the South Branch of the Saskatchewan, the Blackfoot Indians are said to be numerous and warlike, but, as their intercourse with the whites increases, their habits will no doubt change as those of other Indians have changed, and, judging from similar cases, it is but reasonable to suppose that ere settlement reaches them they will have ceased to be dangerous.

On the north branch of the Sakatchewan, near Fort's Pitt and Edmonton, the Indians are numerous, but from all I could learn I believe they are peaceably disposed. By this route the traders pass to and from the Columbia and the Pacific, and even emigrants have passed with their families without experiencing the slightest molestation.

That the Indians are diminishing in numbers in the region immediately to the westward of Red River does not admit of a doubt. But there is one pleasing circumstance connected with their partial disappearance, and that is that they have to a certain extent amalgamated with the whites. The population of origin thus mixed in the Red River Settlement, and in the country drained by the Assiniboine and Little Saskatchewan, cannot be less than six or seven thousand, which, taken together with the remaining natives of unmixed descent, is perhaps as great a number as ever occupied the territory.

To the eastward of Red River, at the Lake of the Woods and Rainy River, the Indians are said to be increasing of late years, and from all I could see, or learn, I believe this to be the case. And, as they occupy the country through which any line of communication between Lake Superior and Red River must pass, it becomes of the utmost importance to ascertain every particular regarding them, to cultivate a good understanding, and take such measures as would prevent the possibility of a collision with them. They are still in a state of primitive barbarism. Missionaries have been among them frequently, but have never succeeded in making much impression upon them, in the way of leading them to embrace Christianity. Their habits and customs are probably the same as they were at the time the first Canadian traders penetrated into the country. Every spring, on the opening of the navigation, they assemble at Fort Francis to celebrate the Dog feast and Scalp dance common to all the tribes in that direction. As many as 500, I have been told, sometimes assemble together on these occasions. Some of them come from Red Lake, within the United States boundary, others from Rat Portage, the Lake of the Woods, Rainy Lake and Lac des Bois Blancs.

Sir George Simpson estimates the entire population as follows:

Fort Frances,	1,500	
Fort Alexander,	300	
Rat Portage,	500	
White Dog,	100	
Lac du Bonnet,	50	
Lac des Bois Blancs,	200	
Shoal Lake (Lac Plat),	200	
		2,850

But this, I suppose, does not include those who come from the United States side. Nevertheless, when the extent of country over which this population is spread is considered, it cannot be considered very great even for an Indian population. But it is deserving of attention that the fact of their having abundance of food at certain seasons enables them to collect in numbers sufficiently great to be formidable if inclined to be troublesome. Sir John Richardson, who passed several times through their country, describes them as being "saney, and independent of the Hudson's Bay Company, from the fact that they have abundance of sturgeon and great quantities of wild rice, so that they can feed themselves without having recourse to the supplies of ammunition or clothing with which the Hudson's Bay Company supply their Indians." This is the case, and I may add that their country is tolerably rich in furs for which, being near the frontier, they get a high price either from the Hudson's Bay Company, or from the American fur traders.

They are certainly of an independent, and I should say unmanageable disposition; and their natural ferocity is not lessened by their constant wars with the Sioux Indians, on the confines of the great prairies, to which every branch of the tribe occasionally sends its contingent. Though but few usually fall in these wars, they are always kept alive, and attended with all the circumstances of atrocity common to Indian feuds. The night attack on the slumbering enemy, the indiscriminate slaughter of men, women, and children, the scalping knife and the tomahawk, are as much characteristic of that warfare as they were of the early Indian wars of which we read. No later than last spring, eleven Saulteux Indians had encamped on an Island, on a lake near Crow Wing. They had been observed by a much larger party of Sioux; and in the morning eleven reeking scalps indicated how completely they had been surprised.

I mention these circumstances not with the view of conveying the impression that there is any present danger on the route by Rainy River, but simply to inform the Government of the character of the people with whom the country will be brought in contact in introducing settlement, and opening up the communication, and to point out the way in which I think the possibility of collision with them may be avoided. As

already stated, the Indians who frequent Rainy River are in the habit of assembling in considerable numbers in summer Now, admitting that their present pacific disposition should continue, and that a treaty were made with them by which they should agree to relinquish a certain portion of their lands, it is still to be considered that in introducing a mixed assemblage of colonists for settlement, or laborers for the construction of roads, there might be some among them who would not be slow to give offence to the Indians, who, in their turn, would be ready enough to retaliate. A collision once occurring, if it were of a serious nature, and no controlling power near at hand, the whole tribe would be at once in arms, and might, as it is to be apprehended they would, give a great deal of trouble. Fort Frances and the Rainy River are the only places where this could occur; and, in order to prevent the possibility of such a contingency, it would be necessary to have a military force at the former place of, say, as many troops as are now at Fort Garry; that is, something over a hundred men. From what I have observed of the character of these Indians, and after maturely considering the subject, I am convinced that *the moral effect which would be produced by the mere presence of such a force* would effectually prevent any act of violence or agression on their part, while, at the same time, it would be a protection to them against agression on the part of unruly settlers or laborers.

Fort Frances is in a position from which communication would be easy, either to the eastward or westward. Below it the navigation is unimpeded, by Rainy River and the Lake of the Woods, to within ninety miles of Fort Garry. Above it there is no interruption to the head of Rainy Lake, so that troops might, if necessary, be moved in either direction; but I do not think it would be necessary to move them, for their presence alone would be sufficient to ensure tranquility.

In my letter of the 21st August, 1858, from Fort William, I mentioned that I had had an interview with the Saulteux Chiefs at Fort Frances, the result of which was that they accorded their full permission to examine the country, but requested that some person might be sent to meet them on their assembling next spring, to explain the objects of the expedition, and whether it was intended to take up any of their lands for settlement, in which case they trusted nothing would be done until arrangements had been made with them. At this interview they were very friendly, and I gave them a letter which Pegwis, the chief of the Saulteux Indians at Red River, had prepared for me of his own accord, and entirely unsolicited on my part. The letter, written by a native schoolmaster, at the old chief's dictation, was as follows:—

(Copy.) THE CHIEF PUGISE,
(Pronounced Pegwis)

My friends,—I hope you all that are to the east of this Colony will give the same respect as we have done to these gentlemen, giving them full permission so as to explore the country along the line of route. Knowing I being the oldest Chief, I have full confidence you will listen to my advice.

Your Chief, the
PUGISE ×
mark.

This letter I had read to them in their own language, and it evidently produced a favourable impression, although they do not look upon Pugise as so great a man, by any means, as their own principal chief.

In the event of taking up a portion of their lands for colonisation I have already had the honor to suggest that the payments should be made in the shape of yearly presents of such articles as would be most useful to them. This is the system adopted by the United States Government, and, when it is properly carried out, it is no doubt the best; but this is not always the case, as I had an opportunity of observing last Fall at the Grand Portage, where a branch of this same tribe receive payments for their lands. On arriving at that place on the 1st August I observed a number of Indians waiting for the agent with their payments. Two months later I again passed that way, and they were still there, with a considerable addition to their number, in daily expectation of the agent, as they had been when I first saw them. The Fall was setting in and it was time they should set out for their hunting grounds, but whether the agent came, eventually, or whether they had to return to the interior, disappointed of the pittance which they had made a long and laborious journey to receive, I am unable to say.

If I mention this circumstance it is that the evils arising from such a state of things may be kept in view in any arrangement which may hereafter be made with the Indians on the Canadian side. When they have to come a long distance the time they lose from their other avocations is of more real importance to them than the pay which they receive, and when they are congregated with their wives and daughters, in large numbers, at some station where there are rival traders, as at the Grand Portage, and have to wait long, it will readily be believed that they are exposed to many demoralizing influences.

ROUTES BETWEEN LAKE SUPERIOR AND RAINY LAKE.

Pigeon River Route.

This route leaves Lake Superior at the Grand Portage Village, and, after passing through a high and hilly region, meets the canoe route from the Kaministaquia at Nequaquon Lake, or, as it is sometimes called, *Lac la Croix*. On reference to the accompanying plan, in profile, it will be seen that on leaving Lake Superior the country rises very rapidly, attaining a height at Mud Lake, just above Mountain Lake, of 1053 feet in a distance, by the windings of the stream, of about 40 miles. From thence westward it falls more gradually, Basswood Lake, which is on the opposite side of the water-shed, and distant from Mountain Lake about 80 miles, being still at an elevation of 661 feet above Lake Superior. In this high region the head-waters of four different rivers are crossed, namely, Pigeon River, Arrow River, Sagoinaga River, and a branch of the Maligne. The Lakes are numerous, as they are everywhere in this district, and some of them large, but the streams which connect them are so small as to be barely navigable for moderate sized canoes; and in the event of a more perfect water communication becoming necessary, this being the highest land in the neighborhood, a summit in fact from which the waters run in every direction, there is no source of supply that could be made available. However, until some better sort of communication is opened, it is valuable as a route for very small and light canoes; as, although the extent of land carriage is great as compared with the Kaministaquia route, it is upon the whole shorter, and there are no rapids which could be at all embarrassing. But, though this much may be said in its favor, it is not so good as the Kaministaquia for large canoes, and a glance at the profile will shew that it can never be made practicable for larger craft than canoes. The Grand Portage itself is entirely within the United States territory, and from thence westward to Rainy Lake the canoe route forms the boundary line.

The Route by Dog Lake, Lac des Mille Lacs, and the River Seine.

This route has the advantage of a long extent of comparatively level country, and an abundant supply of water at the very summit of the water-shed. The country is lower, by 163 feet, at its highest elevation,—which is that of the pond at the west end of the Prairie Portage, 893 feet above Lake Superior,—than the Pigeon River route at Mud Lake, but the difference in altitude may fairly be reckoned from where the Savanne Portage strikes the Savanne River, which at that point is at an elevation of 835 feet above Lake Superior, shewing a difference of 218 feet in favour of this route.

To the east of the height of land Dog River and Lake present a reach of 35 miles, which might be made navigable for large vessels by simply throwing a dam across the outlet of

Dog Lake. To the west, and separated from this by a swamp from which the waters flow in either direction, a reach of 65 miles might be made navigable, in like manner, by throwing a dam across the River Seine, at the Little Falls, ten miles below Lac des Mille Lacs. The difference of level between the two reaches thus rendered available would then be about 100 feet, that on the western side being by so much the highest, and the distance between them but five miles, while the supply of water being abundant, and the ground low, a canal with locks might be constructed to connect the two, in which case there would be a navigable reach of one hundred miles across the summit of the water shed. A glance at the profile of the route will exhibit this much more clearly than language can explain it.

GENERAL REMARKS ON THE ROUTE FROM LAKE SUPERIOR TO RED RIVER.

In the first instance, before traffic has assumed such dimensions as to render canals and railroads necessary, the cheapest, and indeed the only way of opening the communication that can be adopted, is to place steamers or row boats on the navigable reaches, and make good land roads where the navigation is impracticable.

This being admitted, it remains for me to describe the extent of land road that would be necessary, and the navigable reaches that might be rendered available.

To commence at Lake Superior, a land road would be required from Thunder Bay to Dog Lake, as the navigation of the Kaministaquia is utterly impracticable, except for canoes, and could only be rendered otherwise at an enormous outlay. Dog Lake is distant from Lake Superior 22½ miles, and at a higher elevation by 718 feet, a difference of level which renders a canal out of the question, notwithstanding that the supply of water in the Kaministaquia would be ample. The only way of reaching it, therefore, is by land, and the surveys have progressed so far as to shew that a good line may be obtained in a distance of 28 miles.

Next follows the reach through Dog Lake and Dog River, which, allowing for bends, is equal to 35 miles; but, to render this available for large vessels, a dam would be necessary across the outlet of Dog Lake, which would have the effect of throwing back the water to Cold Water Lake, at the eastern end of the Prairie Portage.

From this reach to the Savanne River there would be a land carriage of five miles, through an easy country.

From thence to the Little Falls, on the River Seine—about ten miles below Lac des Mille Lacs—the distance is about 65 miles, which might be rendered navigable, in one unbroken reach, by means of a dam at the Little Falls, just referred to.

From the Little Falls to Rainy Lake the River Seine presents a succession of short navigable reaches, alternating with falls and rapids, the total distance in a direct line being 67 miles, and the fall about 350 feet, that is without including the descent at the Little Falls. Having its source in large lakes the Seine is not subject to great floods, and does not seem at all to overflow its banks; immediately below Lac des Mille Lacs it has an average width of about one hundred feet, and gradually increases in volume until it reaches Rainy Lake. By means of lock and dam it might be rendered navigable, but the amount of lockage would involve too great an expenditure for the present state of the country, or any traffic that could be looked for, for a long time to come. I would, therefore, propose improving the navigation by means of dams of the simplest construction thrown across the river where they would produce the best effect, as marked on the accompanying plan. In this way a broken navigation of 59 miles, between the Little Falls and the twelve portages, which latter occur close to Rainy Lake, might be converted into five navigable reaches by means of six dams, while none of the Portages would be of a greater length than from 50 to 200 yards; at the twelve portages a land road of about seven miles in length would be required. If the Seine were improved in this way the distance from the Little Falls to Rainy Lake, by land and water, respectively, would be nearly as follows:

	Land carriage, yards	Navigable miles.
Portage, past dam at Little Falls ...	200	
1st. Navigable reach to Long Rapid.		13
Carrying place at Long Rapid.	200	
2nd. Navigable from Long Rapid to Island Falls		8
Carrying place at Island Falls.	100	
3rd. Navigable to two Island Falls...		12
Carrying place at do do..	50	
4th. Navigable to High Falls.....		1
Carrying place at High Falls..	200	
5th. Navigable water to the twelve portages		25
In all...	750 yards.	59 miles.

The total distance from the Little Falls to the twelve portages would thus be 59 miles of navigable water in five different reaches, with an aggregate length of land carriage between them of only 750 yards, added to which about seven miles of land road would be required to pass the twelve portages at Rainy Lake. All the dams would have a foundation on solid rock, and wood of the best quality for their construction is everywhere abundant.

For this part of the route, boats such as the Hudson's Bay Company use could be most advantageously employed, as they are easily drawn over a short portage, and might be rendered still more so, in this case, by means of a simple slide or inclined plane made of logs over which they could be quickly hauled.

If, however, it should be considered that a land road would afford a more rapid means of communication, in the event of mail service having to be performed, it should, also, be constructed. For expedition, merely, as regards rapidity of travelling, the land road would be the best, while the river would afford a more easy means of carrying heavy articles.

From the twelve portages, through Rainy Lake, and a part of Rainy River to Fort Frances, the distance is fifty miles; and in this reach there is no obstruction to the navigation.

At Fort Frances there is a fall of 22 feet, which might be overcome by wooden locks. The land carriage, however, being only 300 yards, can involve no great difficulty for the present. Thence to the western extremity of Lac Plat there is no obstruction to the navigation except at two little rapids in Rainy River which a steamer of moderate power could stem with ease: the entire navigable distance in this reach being 158 miles.

From Lac Plat to Fort Garry, a route available for a land road can be obtained in a distance of 91½ miles; and the country being level and favourable, this road might be constructed at a moderate outlay.

By opening the communication in this way the total distance from Lake Superior to Red River Settlement, by land and water would be as follows:

	Land carriage, miles.	Navigable miles.
From Thunder Bay to Dog Lake..	28	
Through Dog Lake and River to the Prairie Portage		35
Land road past Prairie and Savanne Portages to Savanne River.....	5	
Through Savanne River, Lac des Mille Lacs and the River Seine to the Little Falls		65
Broken navigation on River Seine.		59½
Land carriage past the twelve portages on River Seine.....	7	
From the Seine to the western extremity of Lac Plat navigable with only one break at Fort Francis.....		208
Thence to Fort Garry by land....	91½	
Total...	131½	367½

In all one hundred and thirty-one miles and a half of land road, and three hundred and sixty-seven miles and a half of navigable water.

The foregoing does not represent the distance in a direct line, but the extent to be travelled making allowance for the tortuosities of the route.

In regard to the means of transport which could be most economically and advantageously used.

Waggons or carts would be required on the road between Thunder Bay and Dog Lake.

On Dog Lake and River boats, such as already referred to as being used by the Hudson's Bay Company, or even a steamer might be employed.

At the Prairie Portage, carts or waggons would be necessary.

On the Savanne River, Lac des Mille Lacs, and the River Seine as far as the Little Falls, after the dam was constructed at the last mentioned place, there would be an unbroken reach of 65 miles, and on this section it would be advantageous to have a small steamer.

On the 59½ miles of broken navigation, on the River Seine, between the Little Falls and the Twelve Portages, boats, as already explained, should be used, while at the land road past the twelve portages, carts or waggons, as on the other sections of road, would be necessary.

From the River Seine to Fort Frances a steamer would have a clear run of fifty miles.

From Fort Francis to Lac Plat, steamers would have an uninterrupted run of 158 miles.

From the latter place to Fort Garry no provision would have to be made, as the means of transport are to be had in abundance at the Red River Settlement.

If the communication were opened in the manner above set forth, the journey from Lake Superior to Red River might be performed in about three days, that is, allowing that steamers could be maintained at an average speed of ten miles an hour on the navigable reaches, that the land roads might be passed over at the rate of five miles an hour, and that the interrupted navigation of the Seine could be accomplished at the rate of four miles an hour.

This estimate, and it cannot be considered a high one, would give the following result as to distance and time:

FOR LAND ROADS.

From Thunder Bay to Dog Lake.....	28 miles.	
Across prairie and Savanne Portages.....	5	
Past twelve portages on Seine	7	
From Lac Plat to Fort Garry.....	91½	
		131½
Broken navigation on Seine.....		59½

NAVIGABLE WATER.

Through Dog Lake and River	35	
Lac des Mille Lacs and Savanne River.....	65	
From twelve portages R. Seine to Lac Plat ..	208	308
Total distance.....	499 miles.	

Which might be travelled thus:

	Hours.	Minutes.
131½ miles land road at 5 miles per hour.....	26	18
59½, or say 60 miles broken navigation at 4 miles per hour	15	00
308 miles navigable water at 10 miles per hour	30	48
Total.....	72	6

that is, in three days as nearly as may be. But if mail service had to be performed with great celerity, there can be no doubt that with a proper equipment of horses and carriages, a speed of seven miles an hour might be kept up on the land roads; while on the navigable reaches, with boats of sufficient power, an average rate of twelve miles an hour, or even more, might be maintained.

According to a rough estimate which I have made, the total cost of opening the communication in the manner which I propose, would not exceed fifty thousand pounds, but until the surveys now in progress are completed, and the necessary measurements taken, it is impossible for me to submit a very precise estimate in detail.

It has been said, indeed strongly urged, by interested parties, that the route through the State of Minnesota by St. Paul and Pembina, would afford the best means of communication with the Red River Settlement. But I do not see how this opinion can reasonably be ascertained. Under any circumstances there would be a greater extent of land carriage by the Minnesota route, I should say twice or perhaps three times as great as by the Canadian route, so that the time occupied in travelling it would be greater, unless a railroad were constructed, and it will be borne in mind that the extreme western limit of the United States railway system does not as yet approach within seven hundred miles of the Red River Settlement.

The communication, therefore, which it is proposed to open, would afford advantages superior to any line which can be adopted in Minnesota except a line of railroad, and it is reasonable to believe that ere the United States Government can construct such a work, through an unsettled or but thinly peopled country, the trade of the Western territories will have become so much developed as to warrant the construction of railroads between the navigable reaches on the Canadian route.

When the circumstances of the country would admit of the outlay, a continuous railroad—195 miles in length—might be made between Lake Superior and Rainy Lake, and another, of 91½ miles, between Lac Plat and Fort Garry. If this were done, and two locks constructed at Fort Frances, the Red River Settlement would be within less than two days journey of Lake Superior, there being 195 miles of railroad at the eastern end of the route, and 91½ at the western, with an intermediate reach of 208 miles of navigable water.

This would bring Fort Garry within five days' journey of Toronto.

As to the immediate results which might be reasonably anticipated from opening the communication, in the manner which I have proposed, as a preliminary step towards works of a more extended nature, I may enumerate the following:

1st. In the first place the trade of the Red River Settlement would be at once transferred to this part of Canada.

2nd. It is reasonable to suppose that when the Hudson's Bay Company discovered that they could carry on their trade more economically by this route than by Hudson's Bay, they also would adopt it, thus bringing through the country the greater portion of a trade amounting to nearly half a million sterling yearly.

3rd. It would be the first step towards a route through Canada and British Columbia. Once at Red River, there is navigable water with but little interruption to the base of the Rocky Mountains; and through these it appears that Capt. Palliser has recently discovered easy passes, within British territory. From thence westward to Frazer's River the distance is, comparatively, not great. It is, therefore, reasonable to believe that if the route were opened to Red River it would soon be continued all the way to Frazer's River and the Pacific, and as it is the shortest that can be adopted, it would no doubt become the highway of an emigration to the gold regions, the extent of which no one can foresee.

4th. Another, and by far the most important consideration is, that by opening this route a vast extent of fertile land would be thrown open to colonisation, and this is of peculiar interest to Canada at present. It is a well known fact that an emigration is constantly going on from Lower Canada to the prairies of the Western States. Now, the *Rivière Rouge* and the *Nord Ouest*, from the time that the Canadian voyageurs occupied the country, have been familiar words in Lower Canada, and if the route were once opened there can be no doubt but that Canadian emigrants would prefer a land with which they are so much connected by old associations, where a kindred people are ready to receive them, and where they would have the inestimable advantage of living under British laws, to a country where they would not understand the language, and where most

of those of them who do emigrate become mere hewers of wood and drawers of water, to a people who have sharpness enough to turn their simplicity to account.

THE PROGRESS OF THE SURVEY AT PRESENT BEING CARRIED ON BETWEEN LAKE SUPERIOR AND RAINY LAKE.

I have just received despatches from my assistants Mr. L. A. Russell and Mr. J. F. Gaudet. It appears that up to the time they wrote the surveys had been prosecuted with great energy. Mr. Gaudet had completed a cursory exploration of Dog Lake, and made an instrumental survey of Dog River, the Muskaig Lake and the Savanne River, as far as Lac des Mille Lacs. At the time he wrote (23rd Dec.), he was about to commence the survey of the River Seine, as explained in his letter, which I annex, with a plan of his surveys.

Mr. L. A. Russell's operations are detailed in his letter, which I also annex with the plan to which he refers. It seems he has been successful in finding a good line for a road between Thunder Bay and Dog Lake, near an Indian path a little to the west of Current River. This is important, as the region to which his explorations have been confined is the roughest on the whole line of route.

Mr. Gaudet has his head quarters on the Savanne River, and when he wrote was about to set out on the survey of the River Seine.

INDIAN MISSION,
Fort William, January 3rd, 1859.

SIR,—I send a sketch shewing the Current River line, and, also, the Indian winter route which starts from Thunder Bay, about half way between the mouth of the Kaministaquia and Current River, then following the valley of the second river north of Fort William, comes out on Dog Lake, about a mile and a half west of the Current River line.

A better road site can be found along the side of this little river than anywhere about the line, as the latter crosses all the hills, ravines and swamps, among which the said river takes its rise, as well as those at the sources of another little river or brook between the first and Current River.

On the Indian track the country is less hilly and not so swampy. There is a mile or so of bad swamp at the outset, but it can be avoided by starting a short distance to the north, thus coming on a ridge of high land which runs down close to the shore of the lake. The next bad place is where the track first crosses the river, which here cuts its way through a range of granite hills of but inconsiderable height, and through them I think a good pass could be found as they are no worse than those on the Current River line.

There would be three or four little bridges, but they would cross mere brooks, the banks of which are low and good. In the immediate vicinity of Dog Lake there would be some rough ground, but that has to be passed through whatever be the route.

With the exception of the places that I have mentioned the country is pretty level, and the swamps few and short. The soil on the level ground and in the bottom of the swamps is a clayey sand. Under this sand is granite, and indeed, here, as in many other places,, there is but little soil over the rock.

The woods are white birch, poplar, spruce, and pitch pine, on the high grounds; and spruce, larch, and cedar in the lower places.

On the sketch the red dotted line winding about the black one is where a road would have to be taken were it necessary to make it on the Current River line. Between the 2nd and 3rd mile posts is a bad swamp that would have to be passed straight through, as it runs to the river on the east side, and on the other side extends even further, terminating in rocky and broken ground; it would cost more to take a road round, on either side, than it would to make it across. Near the 6th mile post is another swamp, to avoid which there is a sharp turn to the right; and the hill at the sixth post is so steep that we have to wind round its base to the left again. Between the 7th and 9th the dotted line crosses the same brook four times, but it is so small that it merely requires culverts. At the 11th post a swamp occurs, through which we pass straight, as in the one between the 2nd and 3rd, and for the similar reason, that it would cost more to get a good road round it than to make it on the line. The three brooks between the 12th and 13th mile posts are small, the width of the largest being not more than 12 feet. From the 13th to the 18th posts, the ground is good, but about half way to the 19th commence the ranges of hills which lie around Lake Pijké and Hawk Lake. The best way from this is along a valley which comes out about three quarters of a mile west of the discharge of Hawk Lake.

On the hills to the north of this valley are occasional large white pines; there are also some on the 5th mile of the line, on the shore of Current River, about 4 miles from its mouth, and on the shores of Hawk Lake.

The country to the north-east of the line is very rough. At the end next Thunder Bay, Current River, having a general course of north, winds about among steep rocky hills, which sometimes rise straight up from its edge; from the top of one of these, about 6 miles from its mouth, we could see its course for a long distance through an exceedingly rough country. It is full of rapids and falls pouring through clefts of up-heaved granite and slate. Opposite the second mile of the line it passes through slate; but higher up, through granite. About the 14th and 15th miles the ground to the N. E. of the line is more level, till near Lake Pijké, when it gets uneven again.

The banks of that lake are high, and wooded with white birch, poplar, and spruce, but the soil is of the same light sand as elsewhere on the line, and the hills are rocky; its discharge into Hawk Lake is a small and rapid stream, which falls, perhaps, nearly a hundred feet between the two lakes.

The shores of Hawk Lake are much higher than those of Lake Pijké, rising in steep rocky hills from the water's edge; the north shore of the eastern end of the lake is a wall of cliffs, about 150 feet in height, which then rises higher in wooded hills behind. Hawk Lake discharges itself into Dog Lake about a mile to the west of the line by a rapid and shallow brook, which runs from its western extremity. On it are two little lakes, and Indian Portages out of one into the other, and then into Dog Lake.

I am now going to run a line from the Mission to the thirteenth mile on the Current River line; that finished, I will locate the road from Thunder Bay to Dog Lake. I run the line first, as it will give me a much better knowledge of the country.

As I understand my instructions, I am to locate the road on the best ground I can find. I will, therefore, take it along the valley of the second little river north of the Kaministaquia, as shown in the sketch.

I would have run the line from the Mission to the 8th or 9th mile posts, were it not that I know the country through which it would pass to be bad; it would run through the swamp, on the two little rivers behind the Fort, and the ground about the 9th mile at the line is very rough.

I take with me five men, the number you allowed me when I should be running lines. They are Jos. Whiteway, J. Smith, and three of the Mission Indians. I have, as yet, got only one of the Indians at 3s. 9d. per day. I may, perhaps, have to do with three men, as the people of the mission are asking exorbitant wages.

We have had a mild winter hitherto and a good deal of snow, it is now about two feet in depth. The greatest cold that has occurred was on the 8th December, at sunrise, when the thermometer indicated 25° below zero; and on the 17th December, at sunrise, on Hawk Lake, when it shewed 27° below zero. The temperature at the mission was at the same time 19° below zero. On the 15th November the people first crossed the Kaministaquia on the ice.

Thunder Bay is not yet frozen across, but the small bays are nearly all frozen.

Mr. McIntyre expects a Red River Mail this month, and will forward it at once. I will write by that mail.

A mail has arrived but did not bring us any letters.

Wishing you a happy new year,

I remain,

Yours truly,

(Signed,) L. A. RUSSELL.

To S. J. Dawson, Esq., C. E.
in command of the Red River Expedition,

Savanne Depot,
23rd December, 1858.

Sir,—Having now all the surveys in this section completed, as you desired me, I send you plans of my operations.

They are executed in a very rough manner, but it would be losing too much valuable time to do them otherwise.

After scaling through to Jourdain's Rapids, I ran the line connecting the two points. You will perceive, on reference to the plan that the two first miles on the line are swampy, but not bad. I dug down at several places, and found that the average depth of black mould over clay is from 6 to 18 inches. From the 2nd mile post to the 7th anything more beautiful cannot be asked for; it is a cypress ridge, soil sand. The remaining 1¾ mile is a gradual descent to the river. The timber changes to poplar and birch, and we meet with a few rocks but not many; however, these can be avoided by making a short detour.

Dog River, from Jourdain's Rapid to Dog Lake, is 37 miles in length.

On upper Dog River, from where Muskaig River branches off, there is but one portage, 17 chains long and about 15 feet fall. The river has more the appearance of a lake than a river, varying from two to five chains in breadth.

On Muskaig River you will see by the sketch that there are nine portages and five rapids from its confluence with Dog River to Muskaig Lake. This river is exceedingly small and rough.

Muskaig Lake is an extensive sheet of water, a great deal larger than I expected to find it from the size of the river. Where the portages occur the average breadth of the river is from 15 to 20 feet, through cliffs of granite rock. From the head of the 5th portage, with the exception of the rapids that occur between it and the Muskaig Lake, it has a general width of about two chains, winding through a low swampy country timbered with tamarac.

All the islands in Muskaig Lake, with the exception of the two at the outlet, are sketched in. It had been my intention to survey the whole, but the survey of the shore occupied a longer time than I had made calculation for.

Savanne River, from the depot to Mille Lacs, is 18½ miles in length.

While engaged in making my plans I sent all the men, with the rest of the provisions, to Mille Lac, making small *cachettes* at intervals, so that I may use them as I go along. I shall leave in the morning and join my party at the mouth of the Savanne River.

It is my intention to scale the north-west coast of Mille Lacs straight through to your *cachette*, and when I reach it I shall continue down Rivière La Seine, and leave the south-east portion of Mille Lacs till I return.

I think you will agree with me that it is better for me to complete as much of the lower section with what provisions I have now, so that when I return it will be closer for me to portage provisions to Mille Lacs than to the lower end of Rivière la Seine.

The two Indians have up to date taken about 500 rabbits. Fish we have had on every occasion, and have salted half a barrel.

We make with the rabbits a sort of pemican, by boiling the meat with a little lard, which, when frozen and chopped up, is very portable, and makes excellent soup, which is a great saving of pork.

I believe I have written every thing that may interest you; I shall therefore close my letter, and trusting that the work, so far as it has gone, and the arrangements I have made, may meet with your satisfaction.

I remain,

Your humble servant,

(Signed,) J. F. GAUDET.

S. J. Dawson, Esquire,
&c. &c.

THERMOMETRICAL REGISTER.

Up to the 25th of March, 1858, the following register was kept near Fort Garry—lat. 49° 55′ N; long. 97° 21′ W.,—and from that time up to the 6th July, at Dr. Bunn's Cottage—lat. 50° 1′ N.; long. 97° 20′ W.,—the approximate altitude of both places above sea level, being 700 feet, or thereabout.

In the fourth column, the minimum temperature of the previous night is set down at the hour of observation in the morning. Owing to the other occupations of the party, a few days are omitted, and from the same cause no observation was made in the middle of the day during the month of November and a part of December.

The Register at Fort William was kept by Chief Trader McIntyre, the officer in charge of the Hon. H. B. Company's establishment at that place.

The observations were all made with Fahrenheit's thermometer.

RED RIVER SETTLEMENT—THERMOMETRICAL REGISTER,

SEPTEMBER, 1857.

Day of the Month.	Hour of the Day.	Temp. at the hour of observation.	Minimum Temperature.	Direction of the Wind.	Remarks.
16	7 a m....	52.00	49.00	N W	Clear, a light breeze.
	1 p m....	60.00	....	N W	Do do
	7 p m....	35.00	....	W	A fresh breeze.
17	7 a m....	36.00	33.00	S W	Clear, a high wind.
	1 p m....	45.00	....	S W	Do do
	7 p m....	41.00	....	S W	Clear, a fresh breeze.
18	.....	.....	....	....	No observation.
19	.....	.....	....	....	Do
20	.....	.....	....	....	Do
21	7 a m....	45.00	56.00	S S W	Slightly clouded, a gentle wind.
	12 Noon ..	69.00	....	S S W	
	6 p m....	55.50	....	S S W	
22	7 a m....	41.00	36.00	S	Do do
	12 Noon ..	77.00	....	S	A high wind.
	6 p m....	77.50	....	S	
23	7 a m....	62.50	56.25	N W by N	Cloudy, a brisk wind.
	12 Noon ..	75.00	....	N W by N	
	6 p m....	71.00	....	N W by N	
24	7 a m....	44.00	38.00	S	Clear, a very high wind.
	12 Noon ..	70.00	....	S	
	6 p m....	68.00	....	S	Cloudy, a brisk wind.
25	7 a m....	45.00	37.50	S	Do do
	12 Noon ..	70.00	....	S	Clear, a high wind.
	6 p m....	61.00	....	S	Clear, a pleasant wind.
26	7 a m....	47.00	39.00	S	Clear, a high wind.
	12 Noon ..	65.00	....	S	Clear, a very high wind.
	6 p m....	59.00	....	S	Do do
27	7 a m....	42.00	34.00		
	12 Noon ..	61.00	....	S S W	A fresh breeze.
	6 p m....	52.00	....	....	A high wind.
28	7 a m....	41.00	33.00	N W	A fresh breeze.
	12 Noon ..	51.50	....	N W	Do
	6 p m....	46.00	....	N W	A pleasant wind.
29	7 a m....	40.00	32.50	S	Clear, a pleasant wind.
	12 Noon ..	49.00	....	S	A high wind.
	6 p m....	42 00	....	S	Do
30	7 a m....	39.00	33.00	S	Do
	12 Noon ..	51.60	....	....	A fresh breeze.
	6 p m....	47.00	....	....	A pleasant wind.

OCTOBER, 1857.

Day of the Month.	Hour of the Day.	Temp. at the hour of observation.	Minimum Temperature.	Direction of the Wind.	Remarks.
1	7 a m....	67.00	61.00	....	Calm.
	1 p m....	70.00	....	S W	A light breeze, clear.
	7 p m....	63.00	....	S W	A light breeze, clear aurora.
2	.....	....	....	S	Nearly clear, a pleasant wind.
3	.....	....	....	S	A very high wind.
	.....	....	....	....	Smoky in middle of day.
	.....	....	....	....	Aurora, lunar corona.
4	7 a m....	62.00	57.00	S	Overcast, rained a little.
	1 p m....	66.00	....	....	
	7 p m....	59.00	....	....	Aurora, bright.

RED RIVER SETTLEMENT—THERMOMETRICAL REGISTER,

OCTOBER, 1857—(*Continued.*)

Day of the Month.	Hour of the Day.	Temp at the hour of observation.	Minimum Temperature.	Direction of the Wind.	Remarks.
29	8 a m....	29.00	27.00	W N W	A light breeze.
	1 p m....	34.00	....	W N W	Do
	7 p m....	31.00	....	N W by N	A fresh breeze.
30	8 a m....	30.50	31.00	N W by N	A pleasant wind.
	1 p m....	33.00	....	....	
	7 p m....	31.50	....	....	Clear, calm.
31	8 a m....	34.00	27.25	S by E	A high wind.
	1 p m....	44.00	....	....	
	7 p m....	36.50	....	S by E	A light breeze, snow and rain.

NOVEMBER, 1857.

Day of the Month.	Hour of the Day.	Temp. at the hour of observation.	Minimum Temperature.	Direction of the Wind.	Remarks.
1	8 a m....	32.50	32.00	N W	A high wind, snowing.
	6.30 p m.	34.75	....	N W	A high wind, two inches of snow fell.
2	8 a m....	32.50	31.00	N W by W	A fresh breeze.
	6.30 p m.	36.00	....	....	Calm, clear; lunar corona at 2 p. m.
3	7.30 a m.	34.00	31.00	N W	A pleasant wind.
	6 p m....	33.50	....	N W	Overcast, calm nearly.
4	7.30 a m.	35.50	30.50	N W	Overcast, hazy, a fresh beeze.
	8 p m....	35.50	....	....	Overcast, calm.
5	8 a m....	34.50	28.00	....	Foggy, calm.
	7.30 p m.	24.00	....	N W	Overcast, a fresh beeze, snowing.
6	8 a m....	30.50	28.00	....	Overcast, calm.
	7 p m....	30.00	....	....	Cloudy, calm, appearance of snow.
7	10 a m....	30.50	26.10	....	Cloudy, calm; about 4 inches of snow in all.
	7.15 p m.	29.50	....	....	
8	7 p m....	24.00	....	N N W	Overcast, a light breeze; geese flying south.
9	10 a m....	20.50	18.75	N W	Overcast, a fresh breeze, snowing slightly.
	7 p m....	19.00	....	N W	Overcast, snowing a little.
10	8 a m....	19.50	17.00	W	Overcast, snowing slightly.
	7.30 p m.	19.00	....	W by N	A fresh breeze.
11	7.15 a m.	16.00	15.00	....	Calm.
	7.15 p m.	14.00	....	W by N	A high wind, snowing.
12	7.30 a m.	19.50	14.00	W by N	A fresh breeze.
	7.15 p m.	10.00	....	....	Clear, calm; floating ice on river.
13	7.45 a m.	13.00	9.00	....	Overcast, calm; ice taken on river.
	7 p m....	12.50	....	....	Partially clouded, calm.
14	8 a m....	18.00	12.50	W	Overcast, a pleasant wind.
	7.30 p m.	24.00	....	W by N	Overcast, a pleasant wind.
15	8.30 a m.	19.50	17.00	....	Overcast, calm.
	8.30 p m.	29.50	....	S	Overcast, a pleasant wind.
16	8 a m....	30.00	20.00	S S W	Clear; good crossing on the ice.
	7.30 p m.	30.00	....	S W by W	Overcast, a pleasant wind.
17	8 a m....	20.00	19.00	N W by W	A high wind.
	8 p m....	13.50	....	N W	Beautiful aurora—Southern corona.
18	8 a m....	10.00	9.50	W by N	Partially clouded, a high wind.
	6.30 p m.	3.00	....	N W by W	Clear, a high wind; faint aurora.
19	7.30 a m.	5.50	1.50	N W	Clear, a high wind.
	6.30 p m.	6.00	....	N W	Clear, a light breeze; bright aurora.
20	7.30 a m.	4.00	2.50	....	Overcast, calm.
	9.30 p m.	23.00	....	N W by W	Overcast, a high wind.

4	7 a m....	62.00	57.00	S	Overcast, rained a little.
	1 p m....	65.00	....	....	
	7 p m....	59.00	....	....	Aurora, bright.
5	7 a m....	55.00	46.90	W	A brisk wind.
	1 p m....	69.00	....	....	Fires on the plains.
	7 p m....	....	....	....	
6	7 a m....	52.00	45.00	S	Large fires on the plains.
	1 p m....	55.00	....	S	A brisk wind.
	7 p m....	48.00	....	....	
7	7 a m....	50.50	42.00	S	Very smoky, a brisk wind.
	1 p m....	61.00	....	....	
	7 p m....	54.00	....	....	Fires on plains continue.
8	7 a m....	67.00	41.00	S W by S	A stiff breeze—rained a little at 10.
	1 p m....	70.00	....	S W by S	Very light breeze.
	7 p m....	65.00	....	S S W	A fresh breeze.
9	7 a m....	63.00	62.25	S	A high wind—rained about two hours.
	1 p m....	63.50	....	S S W	A light wind.
	7 p m....	56.50	....	....	Calm.
10	7 a m....	46.00	42.00	....	Do
	1 p m....	55.00	....	S W	A light wind.
	7 p m....	52.00	....	....	Calm.
11	7 a m....	45.00	43.00		
	1 p m....	46.00	...		
	7 p m....	49.00	....		
12	7 a m....	41.50	36.00		
	1 p m....	51.00	....		
	7 p m....	45.50	....		
13	7 a m....	47.50	42.00		
	1 p m....	.....	....		
	7 p m....	51.00	....		
14	7 a m....	38.50	34.00		
	1 p m....	50.00	....		
	7 p m....	46.00	....		
15	7 a m....	33.00	32.00		
	1 p m....	45.00	....		
	7 p m...	43.00	....		
16	7 a m....	40.00	32.50		
	1 p m....	44.00	....		
	7 p m....	38.00	....		
17	7 a m....	31.00	24.50		
	1 p m....	34.00	....		
	7 p m....	31.00	....		
18	7 a m....	28.00	28.00		
	1 p m....	36.00	....	.....	Calm with a hazy atmosephere.
	7 p m....	22.00	....		
19	7 a m ...	20.00	17.00		
	1 p m....	30.50	....		
	7 p m....	28.00	....		
20	7 a m....	28.00	22.50		
	1 p m....	50.50	...		
	7 p m....	42.00	....		
21	7 a m....	28.00	28.00		
	1 p m....	55.00	....		
	7 p m....	45.00	....		
22	7 a m....	39.00	36.00		
	1 p m....	49.00	....		
	7 p m....	44.00	....		
23	7 a m....	35.00	34.50		
	1 p m....	52.00	....		
	7 p m....	51.00	....		
24	7 a m....	40.00	32.00		
	1 p m....	41.00	....		
	7 p m....	40.00	....		
25	7 a m....	36.50	29.00		
	1 p m....	47.00	....		
	7 p m....	46.00	....		
26	7 a m....	39.00	38.00	S S E	A high wind—raining
	1 p m....	44.00	....	S	A high wind—raining slightly.
27	8 a m....	34.00	34.00	N	A high wind—rained all night.
	1 p m	49.00	....	N N W	A high wind—snowing a little.
	6 p m....	31.00	....	N N W	A high wind—still snows.
28	8 a m....	27.00	27.00	N W	A fresh breeze.
	1 p m....	31.00	....	N W	Do
	6 p m....	29.00	....	N N W	A high wind.

5	6.30 p m.	6.00	....	N W	Clear, a light breeze; bright aurora.
20	7.30 a m.	4.00	....	....	Overcast, calm.
	9.30 p m.	23.00	....	N W by W	Overcast, a high wind.
21	8 a m....	3.00	2.50	N W by W	Partially clouded, a gale.
	8 p m....	-10.00	....	....	
22	8 a m....	-12.00	-15.00	....	Clear, calm.
	7 p m....	-1.00	....	....	Clear, calm.
23	8 a m....	8.00	-1.00	W	Cloudy, a fresh breeze.
	7.45 p m.	4.00	....	N W	Cloudy, a fresh breeze.
24	8 a m....	00.00	-2.00	....	Clear, calm.
	7.30 p m.	4.00	....	....	Clear, calm.
25	7.30 a m.	10.00	3.00	....	Clear, calm.
	7.30 p m.	20.00	....	N W	Clear, a gentle wind.
26	8 a m....	31.00	....	....	Cloudy, calm.
	8.30 p m.	34.00	....	N W	Overcast, a fresh breeze.
27	8 a m....	34.00	20.00	....	Cloudy, calm, a heavy fog.
	9 p m....	25.00	....	W	Cloudy, very light wind.
28	8 a m....	21.00	21.00	....	Cloudy, calm, snowing.
	7.30 p m.	19.00	....	....	Cloudy, calm, snowing.
29	10 a m....	25.00	20.00	W	Cloudy, a light breeze.
	10 p m....	18.00	....	N W	Cloudy, a high wind, snowing.
30	8 a m....	18.00	17.00	W	Cloudy, a fresh breeze.
	11 p m....	9.00	....	....	Hazy, calm.

DECEMBER, 1857.

Day of the Month.	Hour of the Day.	Temp. at the hour of observation.	Minimum Temperature.	Direction of the Wind.	Remarks.
1	8 a m....	16.00	12.00	....	Cloudy, calm.
	10 p m....	14.00	....	....	Cloudy, calm; snowing a little.
2	8 a m....	10.00	8.00	....	Cloudy, calm.
	9 p m....	7.50	....	....	Cloudy, calm; snowing slightly.
3	8.30 a m.	11.00	7.00	....	Cloudy, calm.
	9 p m....	5.00	....	....	Do do
4	8.30 a m.	-8.00	-12.00	....	Cloudy, calm; white frost.
	7 p m....	-1.50	....	....	Cloudy, calm; bright aurora.
5	8.30 a m.	22.00	-2.00	....	Cloudy; very light wind.
	7 p m....	25.00	....	S	Do do
6	10 p m....	4.00	....	....	Clear, calm.
7	8.30 a m.	17.00	4.00		
8	8.30 a m.	10.00	0.00	....	Cloudy; a fine breeze.
	7 p m....	16.00	....	....	Cloudy; a pleasant wind.
9	8.30 a m.	18.00	16.00	....	Cloudy, calm.
	7 p m....	14.00	....	....	Do do
10	8.30 a m.	14.00	12.00	....	Do do
	7 p m....	16.00	....	....	Do do Aurora.
11	8.30 a m.	0.00	-6.00	....	Do do
	7 p m....	12.00	....	....	Clear, calm.
12	8.30 a m.	18.50	10.00	S by E	Cloudy; a light breeze.
	9 p m....	20.00	....	....	Clear, calm.
13	8.30 a m.	16.00	15.50	....	Do do Mirage this morning.
	9 p m....	16.00	....	....	Do do
14	8.30 a m.	7.50	7.00	....	Do do
	8 p m....	16.00	....	....	Cloudy, calm.
15	8.30 a m.	13.00	13.00	....	Do do Fog.
	8.30 p m.	25.00	....	....	Do do Rains and freezes.
16	8.30 a m.	20.00	18.00	....	Do do
	9 p m....	9.00	....	....	Clear, calm. A brilliant aurora at 9 p. m.
17	8.30 a m.	3.00	3.00	W	Cloudy; a pleasant wind.
	9 p m....	7.00	....	...	Cloudy, calm.
18	8.30 a m.	0.00	-3.00	....	Clear, calm.
	9 p m....	7.00	....	....	Do do
19	8.30 a m.	11.00	7.00	....	Do do
	9 p m....	18.00	....	....	Do do
20	8.30 a m.	20.00	16.00	....	Do do
	9 p m....	14.00	....	....	Cloudy, calm.

RED RIVER SETTLEMENT—THERMOMETRICAL REGISTER,

DECEMBER, 1857—(*Continued.*)

Day of the Month.	Hour of the Day.	Temp. at the hour of observatioo.	Minimum Temperature	Direction of the Wind.	Remarks.
21	8.30 a m.	14.00	10.00	N W	Cloudy ; a high wiod.
	9 p m....	15.00	....	....	Do do
22	8.30 a m.	28 00	6.00	....	Cloudy, calm.
	9 p m....	3.40	....	S W	Cloudy ; a pleasant wind.
23	8.30 a m.	....	11.00	W	Cloudy ; a high wiod.
	9 p m....	15.00	....	....	Clear, calm.
24	8.30 a m.	3.00	-4.00	....	Cloudy, calm.
	9 p m....	0.00	....	....	Do do
25	8.30 a m.	1.00	-6.00	....	Do do
	9 p m	-8.00	....	....	Clear, calm ; aurora.
26	8.30 a m.	-7.00	-11.00	....	Clear, calm.
	9 p m....	14.00	....	....	Cloudy ; snow drifting.
27	8.30 a m.	17.00	12.00	....	Clear, oearly calm.
	9 p m....	9 00	....	....	Do do
28	8.30 a m.	2.00	0.00	....	Cloudy, calm.
	8 p m....	-5.00	....	....	Cloudy, calm ; snowing.
29	8.30 a m.	-2.00	-8.00	....	Clear, calm.
	8 p m....	12.00	....	....	Do do
30	8.30 a m.	1'.00	10.00	....	Do do
	8 p m....	2.00	....	....	Do do
31	8.30 a m.	3.00	-5.00	....	Do do
	8 p m....	5.00	....	....	Do do

JANUARY, 1858.

Day of the Month.	Hour of the Day.	Temp. at the hour of observation.	Minimum Temperature.	Direction of the Wind.	Remarks.
1	8.30 a m..	12.00	-1.00	N E	Cloudy, a high wiod.
	8 p m	-7.00	....	N E	Do do
2	8.30 a m..	10.00	-21.00	N E	Do do
	8 p m.....	19.00	....	N E	Do do
3	8.30 a m..	23.00	19.00	W	Clear, blowing a gale.
	8 p m.....	35.00	....	W	Do do
4	8.30 a m..	-2.00	0.00	....	Clear, calm.
	8 p m.....	-12.00	....	....	Do
6	8.30 a m..	-14.00	-16.00	....	
	8 p m.....	1.00	....	....	
6	8.30 a m..	-4.00	-5.00	....	Cloudy, calm.
	8 p m.....	-15.00	....	....	Clear, calm.
7	8.30 a m..	-7.00	-18.00	....	
	8 p m.....	7.00	....	....	
8	8.30 a m..	7.00	-5.00	....	
	2 p m.....	13.00	....	....	
	8 p m.....	6.00	....	....	Clear, calm, bright Aurora.
9	8 a m.....	-16.50	-18.50	....	Clear, calm.
	2 p m.....	12.50	....	....	Cloudy.
	8 p m.....	12.00	....	S	Do a strong wind.;
10	8 a m.....	10.00	9.00	....	Clear, calm.
	2 p m.....	26.00	....	....	Do
	8 p m.....	5.00	....	....	Do
11	8 a m.....	-7.00	-9.00	....	Do
	2 p m.....	7.50	....	....	Do
	8 p m.....	2.00	...	N E	Cloudy, a high wind.

RED RIVER SETTLEMENT—THERMOMETRICAL REGISTER,

FEBRUARY, 1858.—(*Continued.*)

Day of the Month.	Hour of the Day.	Temp. at the hour of observation.	Minimum Temperature.	Direction of the Wind.	Remarks.
2	8 a m.....	-15.00	-15.50	W	Clear, a high wind.
	2 p m.....	-6.00	....	....	
	8 p m.....	-10.00	....	....	
3	8 a m.....	-17.00	-18.50	W	Clear all day, a fresh breeze.
	2 p m.....	15.00	....	....	
	8 p m.....	-13.00	....	....	
4	8 a m.....	-18.00	-21.00	....	Clear, a light wind.
	2 p m.....	4.50	....	....	Cloudy, a light wind.
	8 p m.....	-1.00	....	....	Cloudy, snowing slightly.
5	8 a m.....	3.50	-2.00	W	Do do
	2 p m.....	14.00	....	W	Clear, a gentle breeze.
	8 p m.....	14.50	....	W	Cloudy, a gentle breeze.
6	8 a m.....	14.00	10.00	W	Clear, a light wind.
	2 p m.....	15.00	....	....	
	8 p m.....	9.00	....	....	Cloudy, calm.
7	8 a m.....	-10.00	-13.05	W	Clear, a fresh breeze.
	2.½ p m..	-6.00	....	....	Do do
	10 p m.....	-16.00	....	....	Do do
8	9 a m.....	-17.00	-22.00	....	Clear, calm.
	2 p m.....	-4.00	....	....	Do
	8 p m.....	-9.00	....	....	Do
9	8 a m.....	-18.50	-18.50	W	A high wind, snowing.
	2 p m.....	-21.00	....	W	A high wind, drifting.
	8 p m.....	-26.00	....	W	Do do
10	8 a m.....	-21.00	-29.00	W	Clear, a light wind.
	2 p m.....	-11.00	....	W	Do do
	8 p m.....	-20.00	....	....	Clear, calm.
11	8 a m.....	-26.00	-27.50	....	Do
	2 p m.....	-6.00	....	....	Do
	8 p m.....	-16.00	....	....	
12	8 a m.....	-24.00	-27.00	....	Do
	2 p m.....	0.00	....	N W	Overcast, a light wind.
	8 p m.....	-2.75	....	N W	Overcast, a light wind, snowing.
13	8 a m.....	1.50	-1.00	N W	Cloudy, a light wind, snowing.
	2 p m.....	-2.00	....	N W	Cloudy, a high wind.
	8 p m.....	-10.00	....	....	
14	8 a m.....	-22.00	-22.00	N W	A high wind.
	2 p m.....	-15.50	....	N W	Do
	8 p m.....	-24.00	....	....	Clear and calm.
15	8 a m.....	-34.00	-37.00	....	Do
	2 p m.....	-18.00	....	....	Do
	8 p m.....	-23.00	....	....	Cloudy, calm.
16	8 a m.....	-10.00	-25.05	....	Do
	2 p m.....	-6.50	....	S E	Cloudy, a light wind.
	8 p m.....	-7.00	....	S E	Do do
17	8 a m.....	-7.00	-10.00	N	Cloudy, a light wind.
	2 p m.....	4.00	....	....	Cloudy.
	8 p m.....	-3.00	....	....	Cloudy, calm.
18	8 a m.....	0.00	-9.00	N W	Cloudy, a light wind.
	2 p m.....	9.00	....	....	Snowing a little.
	8 p m.....	2.00	....	N	A light wi snowing a little.
19	8 a m.....	-1.00	-8.50	....	Cloudy, calm.
	2.20 p m.	12.00	....	....	Do
	8 p m.....	10.00	....	....	Do
20	8 a m.....	4.00	4.00	W	Cloudy, a gale of wind.
	2 p m.....	3.50	....	W	Do do
	8 p m.....	-4.00	....	W	Do do
21	8 a m.....	-15.00	-18.50	....	Clear, calm.
	2 p m.....	-3.00	....	....	Do
	8 p m.....	-10.50	....	...	Do

	8 p m.....	2.00	...	N E	Cloudy, a high wind.

21	8 a m....	-15.00	-15.50	....	Clear, calm.
	2 p m....	-8.00	....	....	Do
	8 p m....	-10.50	....	...	Do

12	8 a m	6.00	2.00	W S W	Cloudy, a pleasant wind.
	2 p m.....	1.00	....	W S W	Cloudy, a fresh breeze.
	8 p m.....	-1.00	....	W	Clear, a light breeze.
13	8 a m	-24.00	-28.50	....	Clear, calm,
	2 p m.....	-13.00	....	....	Do
	8 p m	-18 00	....	....	Do
14	8 a m.....	-14.00	-18.00	....	Do
	2 p m.....	-1.00	....	....	Do
	6½ p m....	-3.00	....	N	Cloudy, a light breeze.
15	8 a m.....	-11.00	-11.00	....	Clear, calm.
	2 p m.....	-6.00	....	....	Do
	8 p m.....	-15.00	....	....	Do
16	8 a m.....	0.00	-17.00	. ..	Do
	2 p m.....	2.00	....	....	Do
	8 p m.....	-5 00	....	....	Do
17	8 a m	-10.00	-17.00	....	Do
	2 p m.....	1.00	....	....	Do
	9 p m.....	-4.00	....	W	Clear, a light breeze.
18	8 a m.....	5.00	-8.00	....	Clear, calm.
	2 p m.....	15.00	....	....	Do
	8 p m.....	9.00	....	....	Do
19	8 a m.....	2.00	0.00	....	Do
	2 p m.....	19.00	....	....	Do
	8 p m.....	11 00	....	....	Do
20	8 a m.....	5.00	2.00	...	Do
	2 p m.....	19.00	....	....	Do
	8 p m.....	6.00	....	....	
21	8 a m.....	1.00	-2.00	E	Do
	2 p m.....	18.00	....	....	Do
	8 p m.....	12.00	....	....	Do
22	8 a m.....	25.00	12.00	....	Do
	2 p m.....	37.00	...	S	A light breeze, rained a little in the afternoon.
	8 p m.....	35.00	....	....	
23	8 a m.....	32.00	31.00	....	Calm.
	2 p m.....	32.00	....	....	Do
	8 p m.....	31.00	....	....	Do
24	8 a m.....	19.00	19.00	....	Cloudy, calm.
	2 p m.....	16.00	....	....	Do
	8 p m.....	10.00	....	....	Do
25	8 a m.....	10.00	10.00	....	Overcast, calm.
	2 p m.....	17.50	....	....	Do
	8 p m.....	9.00	....	....	Do
26	8 a m.....	6.00	4.00	....	Overcast, snowing a little.
	2 p m.....	10.00	....	....	
27	8 a m.....	13.00	13.00	....	
28	8 a m.....	0.00	-1.00	....	Do do
	2 p m.....	-1.00	....	....	
	7 p m.....	-3.00	....	....	
29	10 a m....	1.00	-8 00	....	
	2 p m.....	-1.00	....	....	
	8 p m.....	-3.00	....	....	Clear, a calm all day.
30	8 a m	4.00	-8.50	....	
	2 p m.....	10.00	....	....	
	8 p m.....	6.00	....	....	Do do
31	8 a m.....	9.00	7.00	....	
	2½ p m....	15.00	...	....	
	8 p m.....	9.00	....	....	Light snow.

FERUARY, 1858.

Day of the Month.	Hour of the Day.	Temp. at the hour of observation.	Minimum Temperature.	Direction of the Wind.	Remarks.
1	8 a m....	4.00	4.00	....	Clear, calm, snowed a little during the night.
	2 p m....	-1.00	....	....	
	8 p m....	-6.00	....	W	Clear, a high wind.

22	8 a m....	-10.00	-19.00	....	Calm, Cloudy.
	2 p m....	10.50	....	....	Do
	8 p m....	5.50	....	....	Do
23	8 a m....	8.00	4.00	S	Cloudy, a light wind.
	2 p m....	24.00	....	....	Cloudy, snowing a little.
	8 p m....	18.00	....	W	Cloudy, a light wind.
24	8 a m....	17.00	14.00	N W	Clear, a light wind.
	2 p m....	26.00	....	....	Clear, calm. Snow melting in the sun.
25	9 a m....	25.00	15.50	....	Do
	2 p m....	37.50	....	....	Cloudy, calm.
	8 p m....	30.00	....	....	Do
26	8 a m....	34.00	28.00	....	Do
	2 p m....	39.00	....	W	Cloudy, a light wind.
	8 p m....	27.00	....	W	Blowing a gale.
27	8 a m....	12.00	11.00	W	Cloudy, a high wind.
	2 p m....	8.00	....	W	Clear, a high wind.
	8 p m....	2.00	....	....	Cloudy, calm.
28	9 a m....	-9.00	-11.00	N	Clear a high wind.
	2 p m....	-2.00	....	N W	Cloudy, a light wind.
	8 p m....	-7 00	....	....	Cloudy, calm.

MARCH, 1858.

Day of the Month.	Hour of the Day.	Temp. at the hour of observation.	Minimum Temperature.	Direction of the Wind.	Remarks.
1	8 a m	-10.00	-19.50	....	Clear, calm.
	2 p m	5.00	...	S	Clear, a light wind.
	8 p m	5.00	....	....	Snowing a little.
2	8 a m	-8.00	-14.00	W	Clear, a light wind.
	2 p m	1.00	...	....	Clear, a light wind.
	8 p m	-8.00	...	....	Clear, a light wind, Aurora.
3	8 a m	2.00	-8.50	....	Cloudy, calm.
	2 p m ...	14.00	....	....	Do.
	8 p m	-4.00	....	....	Do.
4	8 a m	2 00	-4.00	....	Do.
	2 p m	21.00	....	....	Hazy, calm.
	8 p m	21.50	....	S	Cloudy, a high wind.
5	8 a m	23.00	19.00	....	Cloudy, calm, snowed in the night.
	2 p m	32.00	....	....	Cloudy, calm.
	10 p m....	20.05	....	....	Do.
6	8 a m	15.00	5.00	....	Do.
	2 p m	31.00	....	....	Snowed for an hour, very slightly.
	9 p m	23.00	....	....	Cloudy and calm.
7	8 a m	21.00	18.00	....	Do.
	2 p m	30.00	....	....	Do.
	9 p m	24.00	....	....	
8	8 a m	30.00	21.00	....	Do.
	2 p m	37.00	....	....	Do.
	8 p m	29.00	....	....	Do.
9	8 a m	28.00	26.00	S	Cloudy, a light wind.
	2 p m	35.50	....	....	Clear, a light wind.
	8 p m	31.00	....	S	Cloudy, a light wind.
10	8 a m	30.00	27.00	N W	Snowing, a high wind.
	2 p m	30.00	....	W N W	Do. do.
	8 p m	10.00	....	W	Clear, a light wind.
11	8½ a m....	22.00	....	....	Cloudy and calm.
	2 p m	38.00	....	....	Clear and calm.
	8 p m	19.00	....	....	Do.
12	8 a m	22.00	11.00	....	Do.
	2 p m	40.00	....	....	Cloudy and calm.
	8 p m	38.00	...	S	Clear, a light wind, bright Aurora.
13	8 a m	34.50	30.00	....	Clear and calm.
	2 p m . ..	41.00	....	....	Do.
	8 p m	34.00	....	....	Do.
14	8 a m	35.50	25.00	....	Do.
	2 p m	51.00	....	....	Cloudy, hazy.
	8 p m	40.00	....	....	Thunder and lightning, rain.

RED RIVER SETTLEMENT—THERMOMETRICAL REGISTER,

MARCH, 1858.—*Continued.*

Day of the Month.	Hour of the Day.	Temp. at the hour of observation.	Minimum Temperature.	Direction of the Wind.	Remarks.
15	8 a m	41 00	40.00	E	Cloudy, a high wind.
	2 p m	45.00	....	....	Cloudy, calm.
	8 p m	39.00	....	....	Heavy fog, a drizzling rain.
16	8 a m	34.00	32.00	N	Snowing a little, a light wind.
	2 p m	35.00	....	....	Snowing a little.
	8 p m	33.00	....	....	Cloudy, calm.
17	8 a m	27.00	26.00	N E	Cloudy, a light wind.
	2 p m	31.00	....	....	Cloudy, calm, plenty of crows.
	8 p m	26.00	....	....	Cloudy, calm.
18	8.35 a m ..	26.00	24.00	....	Do.
	2 p m	32.00	....	....	Do.
	8 p m	29.00	....	....	Do.
19	8 a m ..	27.00	24.00	....	Hazy, calm.
	2 p m	37.00	....	....	Geese and Ducks appear, also Hawks, &c.
	8 p m	31.00	....	....	Raining a little at 9, p. m.
20	8 a m	31.00	30.00	N W	Cloudy, a high wind.
21	.. ..	....	....	....	No observations
22	.....	....	....	N W	Stormy, a high wind. River rising.
23	8 p m	34.00	....	....	Fine clear day, calm.
24	8 a m	35.00	...	....	Clear, calm.
	2 p m	40.00	....	....	
	8 p m	31.05	....	....	
25	8 a m	34.00	22.50	....	Ice breaking on Red River.

APRIL, 1858.

Day of the Month.	Hour of the Day.	Temp. at the hour of observation.	Minimum Temperature.	Direction of the Wind.	Remarks.
8	7 a m....	34.00	34.00	N E	Clouded, a light breeze.
	2 p m....	41.00	....	N E	Cloudy, very brisk wind, river falling.
	8 p m....	38.00	....	N E	Cloudy, gentle wind.
9	7 a m....	32.00	31.00	N	Brisk wind.
	2 p m....	42.06	....	N	Do
	8 p m....	33.05	....	....	Calm.
10	7.10 a m.	37.00	33.00	S	A gentle wind.
	2 p m....	43.50	....	S	A brisk wind.
	8 p m....	39.50	....	S	A gentle wind.
11	8 a m	38.00	32.00	N	Do
	2 p m....	40.50	....	N	A brisk wind.
	8 p m....	33.00	....	N	A high wind.
12	7.10 a m.	33.00	31.00	N	A brisk wind.
	2 p m....	41.00	....	N	A gentle wind.
	8.10 p m.	36.50	....	....	Clear, calm, faint aurora.
13	7.30 a m.	40.00	28.00	S E	Clear, gentle wind, frogs begin to croak.
	2 p m....	50.50	....	S E	Clear, brisk wind, farmers ploughing.
	8 p m....	43.00	....	S E	Clear, gentle wind, faint aurora.
14	8 a m....	40.00	36.00	S E	Cloudy, very high wind.
	2 p m....	38.00	....	S W	High wind.
	8 p m....	26.00	....	N	Clear, gentle wind.
15	7 a m....	30.00	28.00	N W	A high wind.
	2 p m....	26.00	....	N W	Do
	8 p m....	24.00	....	N W	A gentle wind.
16	7.10 a m.	22.00	19.00	W	A high wind.
	2 p m....	32.00	....	W	H very high wind.
	8 p m....	28.00	....	....	A gentle wind.

RED RIVER SETTLEMENT—THERMOMETRICAL REGISTER,

MAY, 1858.—(*Continued.*)

Day of the Month.	Hour of the Day.	Temp. at the hour of observation.	Minimum Temperature.	Direction of the Wind.	Remarks.
7	7.10 a m.	43.00	30.00	....	Calm.
	2 p m....	58.00	....	....	Do
	8 p m....	43.00	....	N	High wind.
8	7 a m....	41.00	30.00	N W	Clear, gentle wind.
9	7 a m....	37.00	21.00	....	Calm, clear.
	2 p m....	48.00	....	N	Very brisk wind.
	8 p m....	41.00	....	N	A gentle wind.
10	7 a m....	46.00	29.00	W	A brisk wind.
11	7 a m....	49.00	29 50	S	Very high wind.
	2.30 p m.	52.00	....	W	Do do
12	7 a m....	31.00	24.00	N W	Do do
	7 p m....	42.00	....	N	High wind.
13	7 a m....	31.00	29.50	N	high wind, snowing a little.
	2 p m....	31.50	....	W	Very high wind, snow storm.
	8 p m....	32.00	....	W	High wind, snow ceased at 5, p. m.
14	7 a m....	31.50	26.50	N	A gentle wind.
	2 p m....	32.50	....	W	A moderate wind.
	8 p m....	30.00	....	W	A high wind.
15	7 a m....	31.50	26.50	S	Clear, gentle wind.
	2 p m....	41 00	..	S	A very high wind.
	8 p m....	33.00	....	S	Do do
16	7 a m....	42.00	28.00	S	Cloudy, light wind.
	2 p m....	55.00	....	S	Light wind.
	8 p m....	40.00	....	S	Gentle wind.
17	7 a m....	31.50	29.00	W	Overcast, gentle wind; a little rain.
	2 p m....	39.50	....	W	Gentle wind.
	8 p m....	35.00	....	....	Calm.
18	7 a m....	35.00	26.50	W	High wind.
	2 p m....	.....	....	S W	Overcast; raining; high wind.
	8 p m....	42 00	....	....	Clear, calm.
19	7 a m....	42.00	34.00	....	Calm.
	2 p m....	63.00	....	S W	Gentle wind.
	8 p m....	57 00	....	S W	Clear, a gentle wind.
21	7½ a m ..	53.00	37.00	S	Calm, brisk wind.
	2 p m....	68.00	....	S	Hazy, high wind.
	8 p m....	62.50	....	S	High wind.
22	7 a m....	56.00	56.00	S	Gentle wind.
	2 p m....	....	....	....	Do
	8 p m....	54.00	....	N	A brisk wind.
23	7 a m....	48.00	42.00	N	Gentle wind.
	2 p m....	62.00	....	N	Hardly perceptible wind.
	8 p m....	55.00	....	....	Calm, clouded.
24	8 a m....	62.00	46.00	S	Gentle wind.
	2 p m....	70·00	....	S	Do
	8 p m....	62.00	....	S	Clear, gentle wind.
25	7½ a m....	61.00	48.00	....	Clear, calm
	2 p m....	72.00	....	S	Clear, hardly perceptible wind.
	8 p m....	62.00	....	S	Clear, gentle wind.
26	8 a m....	65.00	46.00	S	High wind.
	2 p m....	71·00	....	....	Very high wind.
	8 p m....	51.00	....	N W	Light wind; rain.
27	7 a m....	52.00	43.00	S E	Gentle wind; rain.
	2 p m....	70 00	....	....	Gentle wind.
	8 p m....	58.00	....	S W	Do
28	7 a m....	55.00	45.00	S W	Thunder and lightning; hail.
29	8 a m....	57.00	44.00	W	Gentle wind.
	2 p m....	62.00	....	W	High wind.
	8 p m....	55.00	....	W	Gentle wind.
30	7 a m....	52.00	44 00	W	High wind.
	2 p m....	53.00	....	N	Gentle wind.
	8 p m....	46.00	.. ..	N	Overcast; gentle wind; a little rain.

	2 p m....	32.00	....	W	H very high wind.
	8 p m....	28.00	....	....	A gentle wind.
30	7 a m....	52.00	44 00	W	High wind.
	2 p m....	53.00	....	N	Gentle wind.
	8 p m....	46.00	. ..	N	Overcast; gentle wind; a little rain.

17	7 a m....	33.00	24.00	....	Clear and calm.
	2 p m....	46.50	....	S	Some ice from Assiniboine floating down.
	8 p m....	39.00	....	....	Calm.
18	7 a m....	40.00	33.00	....	Do
	2.30 p m.	42.00	....	....	Do
	8 p m....	38.00	....	....	Do
19	7 a m....	40.00	34.00	....	Do
	2 p m....	55.75	....	....	Clear, calm.
	8 p m....	48.00	....	W	Clear, a gentle breeze.
20	7 a m....	45.00	34.00	W	A gentle wind.
	2 p m....	58.00	. ..	W	A brisk wind.
	8 p m....	42.00	....	....	Calm, faint aurora,
21	7 a m....	37.50	32.00	....	A brisk wind.
	2 p m....	51.00	....	W	A gentle wind.
	8 p m....	48.25	....	W	A high wind.
22	7 a m. ..	20.00	19.00	N W	Do
	2 p m....	35.50	....	N W	Hazy, a gentle wind.
	8 p m....	25.00	....	....	Clear, high wind, lunar corona.
23	7 a m....	20.50	17.00	W N W	Clear, a gentle wind.
	2 p m....	43.00	....	W N W	Clear, a brisk wind.
	8 p m....	23.00	....	....	Clear, a gentle wind.
24	7 a m....	24.00	16.00	E	Do do
	2 p m.. .	37.00	....	E	A gentle wind.
	8 p m....	33.00	....	....	Light hazy appearance, calm.
25	7 a m....	35.00	29.00	S	A gentle wind.
	2 p m....	49.00	....	S W	A brisk wind.
	8 p m. ..	38.96	....	N	A gentle wind.
26	7 a m....	35.00	32.00	N W	Do
	2 p m....	50.50	....	W	Do
	8 p m....	44.00	....	S E	Do
27	8 a m....	45.00	40.00	S	A very high wind.
	2.10 p m.	59.00	....	S	A gale.
	8 p m....	54.00	....	S S W	A light wind.
28	7 a m....	50.50	40.00	S	Hazy, a gentle wind.
	2 p m....	65.00	....	S W	A gentle wind.
	8 p m....	56.00	....	....	Calm.
29	7.5 a m..	38.00	38.00	W N W	A high wind.
	2 p m....	47.00	....	N	A storm.
	8 p m....	41.00	. ..	W N W	A high wind.
30	7 a m....	40.00	27.50	W	A gentle wind
	2 p m....	45.00	....	N	Clear, a strong wind.
	8 p m....	33.00	....	N W	Clear, a gentle wind.

MAY, 1858.

Day of the Month.	Hour of the Day.	Temp. at the hour of observation.	Minimum Temperature.	Direction of the Wind.	Remarks.
1	7 a m....	33.00	28.50	....	Calm, clear.
	2 p m....	48.75	....	W	Clear, hardly perceptible wind.
	8 p m....	42.00	....	....	Calm.
2	7 a m....	49.00	33.00	S	Clear, gentle wind.
	2 p m....	58.50	....	S	Clear, very brisk wind.
	8 p m....	50.00	....	S	Clear, gentle wind.
3	7 a m....	48.50	38.50	S	A gentle wind.
	2 p m....	61.00	....	S	Do
	8 p m....	53.00	....	S	Hazy, gentle wind.
4	7 a m....	50.00	38.00	S	Hazy, very light wind.
	2.20 p m.	75.00	....	....	Very smoky, calm.
	8 p m....	51.00	....	....	A gentle wind.
5	7 a m....	50.50	38.75	N	A brisk wind, smoky.
	2 p m....	64.00	....	N	A high wind
	8 p m....	51.00	....	N	Cloudy, a stiff breeze.
6	7.5 a m .	45.00	39.00	N E	High wind.
	2 p m....	45.00	....	W	A moderate wind.
	8 p m....	40.50	....	N W	A pleasant wind.
21	7 a m....	55.00	40.00	S	Clear, a gentle wind
	2 p m....	72.00	....	S	A gentle wind.
	8 p m....	63 00	...	S	Do

JUNE, 1858.

Day of the Month.	Hour of the Day.	Temp. at the hour of observation.	Minimum Temperature.	Direction of the Wind.	Remarks.
1	9 a m ...	61.00	48.00	S	Clear; gentle wind.
2	7 a m....	45 00	.00	N W	A gentle wind, clouded.
3	7 a m....	56.00	44.00	W	Do do
	2 p m....	62.00	....	N	Do do partially clouded.
	8 p m....	53.00	....	N	A high wind.
4	7 a m....	52.00	40.00	N	A light wind.
	8 p m..	63.00	....	S W	A gentle wind; rain.
5	7 a m....	61.00	50.00	W S W	A gentle wind.
	2 p m....	67.00	....	W	Do do
	8 p m....	52.00	....	N W	Clear; hardly perceptible wind.
6	7 a m....	61.00	43.00	S	A gentle wind.
	2 p m....	63.00	....	S W	A brisk wind.
	8 p m....	47.00	....	N W	A high wind; sky clouded.
7	7 a m....	47.00	32.00	...	Calm.
	2 p m....	58.00	....	....	Do
	8 p m....	50.00	37.00	....	Calm, clear.
8	7 a m....	66.00	....	S W	A gentle wind.
	2 p m....	84.00	....	....	Calm; partially clouded.
	8 p m....	54.00	....	N	Clear; a gentle wind.
9	7 a m....	48.00	44.00	N	Clear; a gentle wind.
	2 p m....	55.00	....	N W	A high wind; clouded.
	8 p m....	47.00	....	N W	A gentle wind.
10	7½ a m...	51.00	32.50	....	Clear, calm.
	2 p m....	61.00	....	W	Clear; a brisk wind.
	8 p m....	53.00	....	....	Clear, calm.
11	7 a m....	56.00	39.00	....	Do do
	2 p m....	71.00	....	....	Do do
	8 p m....	....	....	....	Do do
12	7 a m....	58.00	56.00	W	A gentle wind.
	2 p m....	71.00	....	W	Do do a few clouds.
	8 p m....	55.00	....	....	Clear, calm.
13	7 a m....	58.00	44.00	W	Clear; a gentle wind.
	2 p m....	79.00	....	W	A high wind.
	8 p m....	56.00	....	N	A very high wind.
14	7 a m....	51.00	43.50	....	Calm.
	2 p m....	65.00	....	S W	A gentle wind.
	8 p m....	54.00	....	W	A gentle breeze.
15	7 a m....	52.00	40.00	W	A gentle wind.
	2 p m....	63.00	...	W	Clear; a brisk wind.
	8 p m....	62.10	....	....	Clear, calm.
16	7 a m	54.00	40.00	S W	A gentle wind; a little rain.
	2 p m....	70.00	....	N	A high wind.
	8 p m....	58 00	....	N	A high wind.
17	7 a m....	56.00	54.50	N	Do do
	2 p m....	60.00	....	N	A very high wind.
	7 p m....	56.00	....	N	A high wind.
18	7 a m....	53.00	51.50	....	Do do
	2 p m....	63.00	....	N	A heavy mist; moderate wind.
	8 p m....	59.00	....	....	Drizzling rain; calm.
19	7 a m....	57.00	52.00	N W	A brisk wind.
	2 p m....	64.00	....	W	Do do
	8 p m....	57.00	....	N	A gentle wind.
20	7 a m....	61.00	49.00	....	Clear, calm.
	2 p m....	77.50	....	N	Clear; a high wind.
	8 p m....	75 00	....	S	A gentle wind.
21	7 a m....	69.00	63.50	....	Calm; rain, also thunder.
22	7 a m....	72.00	59.00	S	A gentle wind.
	2 p m....	80.00	....	S E	Hardly percep. wind; thunder & rain in afternoon.

RED RIVER SETTLEMENT--THERMOMETRICAL REGISTER,

JUNE, 1858—(*Continued.*)

Day of the Month.	Hour of the Day.	Temp. at the hour of observation	Minimum Temperature.	Direction of the Wind.	Remarks.
23	2 p m....	76.00	....	....	Calm.
	8 p m....	65.00	....	....	Do
24	7 a m....	67.00	50.00	....	Clear, calm.
	2 p m....	86.00	....	....	Do do
	8 p m....	70.00	....	....	Do do
25	7 a m....	67.00	60.00	....	Calm.
	2 p m....	77.00	....	S	Hardly perceptible wind.
	8 p m....	69.00	....	N W	A gentle wind.
26	8 a m....	70.00	60.00	S W	Do do
	2 p m....	77.00	....	S	Clear; a gentle wind.
	8 p m....	64.50	....	....	Clear, calm. Barley in the ear.
27	7 a m....	62.00	51.00	....	Calm. Ripe strawberries.
	2 p m....	62.00	....	N	A gentle wind.
28	2 p m....	69.00	....	N	Light wind.
	8 p m....	72.00	....	S E	A gentle wind.
29	7 a m....	64.00	58.00	....	Overcast, raining; gentle wind.
	2 p m....	88.00	....	....	Calm.
	8 p m....	74.00	....	....	Calm, clear.
30	8 p m....	72.00	....	....	Do do.

JULY, 1858.

Day of the Month.	Hour of the Day.	Temp. at the hour of observation.	Minimum Temperature.	Direction of the Wind.	Remarks.
2	8 a m....	64.00	51.00	....	Clear, calm.
	2 p m	79.00	....	S	Clear, a gentle wind.
	8 p m....	65.00	....	....	Clear, calm.
3	7 a m....	56.00	51.00	N	A brisk wind.
	2 p m	62.00	....	N	Clear, a brisk wind.
	8 p m....	55.00	....	....	Clear, calm.
4	7 a m....	53.00	47.00	S	A great storm; thunder and rain.
	2 p m....	74.00	....	S	Do
	8 p m	76.00	....	S	Do
5	7 a m....	76.00	57.00	S	A brisk wind.
	2 p m....	87.50	....	S	A storm.
6	7 a m....	89.00	64.00	....	Calm.

FORT WILLIAM—THERMOMETRICAL REGISTER,

AUGUST, 1857.

Day of the Month.	Hour of the Day.	Temp. at the hour of observation.	Direction of the Wind.	Remarks.
3	1 p m....	72.00	W, gentle.	Close, appearance of thunder.
	8 p m....	65.00	W do	Do
4	8 a m....	65.00	N W	Cloudy.
	12 noon ...	70 00	N W	
5	8 a m....	68.00	N W	
	7 p m....	65.00	E	Appearance of rain.

FORT WILLIAM—THERMOMETRICAL REGISTER,

AUGUST, 1857—(*Continued.*)

Day of the Month.	Hour of the Day.	Temp. at the hour of observation.	Direction of the Wind.	Remarks.
30	7 a m....	65.00	N W	Cloudy.
	1 p m....	67.00	N W	Do
31	7 a m....	58.00	N E	Clear.
	1½ p m...	61.00	....	
	7 p m....	59.00	S E	Do

SEPTEMBER, 1857.

Day of the Month.	Hour of the Day.	Temp. at the hour of observation.	Direction of the Wind.	Remarks.
1	7 a m....	58 00	E, light.	Foggy, with light clouds.
	7 p m....	69.00	S W	Thunder and rain.
2	7 a m....	65.00	S W	Do do
	3 p m....	66 00	S W	Do do
	6 p m....	60.00	N E	Heavy clouds.
3	7 a m	63.00	N	D do
	12 noon ...	71.00	N	
	6 p m....	70.00	W	Appearance of rain.
4	7 a m....	65.00	N W	Rain.
	7 p m....	62.00	N	Rain ceased, still cloudy.
5	7 a m....	61.00	N W	Clear, much rain last night.
	12 noon ...	63.00	N W	Clear.
	6 p m....	60.00	N W	Fine weather.
6	7 a m....	57.00	S E	Do
	1 p m....	60 00	S E	Overcast.
	7 p m....	58.00	S E	Do
7	7 a m....	56.00	S E	Heavy clouds.
	1 p m....	63.00	S E	Appearance of rain.
	6 p m....	61.00	S E	Do do
8	8 a m....	61.00	S E	Do do
	1 p m....	66.00	E	Do do
	6 p m....	60.00	E	Heavy fog.
9	7 a m	55.00	E	Do light rain.
	1 p m....	57.00	E	Do drizzling rain,
	7 p m....	58.00	E	Do do
10	8 a m....	65.00	W	Rain and thunder during the night.
	2 p m....	63.00	W	Rain all day.
	6 p m....	61.00	N	Still raining.
11	7 a m....	51.00	N	Much rain during the night.
	2 p m....	46.00	N E, a gale.	Continues to rain.
	6 p m....	47.00	N E very brisk	Poured rain all day.
12	7 a m....	52.00	W, light.	Rainy sky.
	1 p m....	53.00	Do	
	6 p m....	55.00	Do	Appearance of more rain.
13	8 a m....	53.00	W	
	6 p m....	54.00	S E	
14	8 a m....	55.00	W	Much rain last night.
	12 noon ...	80.00	W	
	6 p m....	55 00	W	
15	8 a m....	53.00	W	
	1 p m....	54.00	W	
	8 p m....	52.00	S E	Overcast, appearance of rain.
16	8 a m....	50.00	E	Rain.
	6 p m....	54.00	E	

17	7 a m....	50.00	N	[Very cloudy.

5	8 a m....	68.00	N W	
	7 p m....	65.00	E	Appearance of rain.
16	6 p m....	52.00	S E	Overcast, appearance of rain.
	8 a m....	50.00	E	Rain.
	6 p m....	54.00	E	
6	8 a m....	66.00	S, gentle.	Cloudy, appearance of thunder shower.
	1 p m....	67.00	S, brisk.	Do do do
	6 p m....	66.00	Calm.	Appearance of shower.
7	8 a m. .	65.00	E, gentle.	Clear, appearance of fine weather.
	2 p m....	71.00	Do	Clear, fine weather.
	7 p m....	68.00	W, fresh.	Do do
8	7 a m....	63.00	N do	Clear.
	2 p m....	66.00	N do	Clear, fine weather.
	7 p m....	64.00	S E	Cloudy, appearance of rain.
9	8 a m....	62.00	N E	Dry, cloudy.
	1 p m....	64.00	N E	Thunder and rain.
	7 p m....	63.00	E	Thunder clouds.
10	7 a m....	63.00	S E	
	1 p m....	62.00	S E	Sultry, heavy rain.
	7 p m....	62.00	E	Do do
11	7 a m....	60.00	E	Dry, foggy.
	1 p m....	64.00	E	
	7 p m....	61·00	E	Thunder clouds, appearance of rain.
12	7 a m....	60.00	E	Thunder clouds.
	1 p m....	63.00	E	Do
	7 p m....	61.00	N E	Heavy rain and thunder.
13	7 a m....	64.00	S E	Heavy clouds, appearance of rain.
	1 p m....	71.00	W, brisk.	
	7 p m....	67.00	Do	Clear, fine weather.
14	7 a m....	67.00	N W	Clear, fine.
	1 p m....	64.00	W	Do
	6 p m....	62.00	N W	Do
15	7.30 a m.	62.00	N W	Do
	1 p m.. .	64.00	N W	Do
	7 p m....	61.00	S E	Do
16	8 a m....	57.00	W	Do
	1 p m....	61.00	W	Sultry, thunder clouds.
	7 p m....	60.00	E	Appearance of rain.
17	8 a m....	65.00	S E	Do do
	1 p m....	65.00	S E	Light clouds.
18	6 a m....	59.00	E	Overcast, raining.
	3 p m....	62.00	E	
	6 p m....	60.00	E	
19	7 a m....	60.00	N W	Clear.
	12 noon...	63.00	S E	Thunder clouds.
	6 p m....	62.00	S E	
20	7 am....	59 00	S E	Clear.
	12 noon ..	64.00	W	Shower of rain.
	6 p m....	61.00	W	Foggy, rain finished.
21	7 a m....	56.00	N E	Do
	2 p m....	57.00	N E	Do
	7 p m....	57.00	N E	Do
22	7 a m....	59.00	N	Heavy clouds.
	12 noon ..	62.00	....	Heavy clouds.
	6 p m....	59.00	W	Clear.
23	8 a m....	63.00	S W	Heavy clouds, showers of rain.
	1 p m..	64.00	S W	Raining.
	7 p m....	61.00	S E	Do
24	8 a m....	65.00	S E	Heavy clouds, showers of rain.
	1 p m....	61.00	S E	Do do
	6 p m....	67.00	S E	Do do
25	7 a m....	61.00	S E	Do do
	1 p m....	72.00	S E	Do do
	7 p m....	69.00	S E	Do do
26	7 a m....	61.00	S E	Do do
	1 p m....	68.00	S E	Do do
	6.30 p m.	65.00	S E	Thunder, with heavy rain.
27	7 a m....	61.00	N	Thunder, with rain.
	1 p m....	65.00	N	Thunder storm, with rain.
	6 p m....	62.00	N	
28	8 a m....	58.00	N W	Heavy clouds, showers.
	1 p m....	61.00	N W	Do do
	7 p m....	60.00	N W	Do do
29	8 a m....	62.00	N W	Clear, appearance of fine weather.
	1.30 p m.	65.00	N W	
17	7 a m....	50.00	N	Very cloudy.
	1 p m....	51.00	N	Do
	6 p m....	49.00	N	
18	7 a m....	47.00	N	Frost during the night,
	12 noon...	46.00	N	Clear.
	6 p m....	44.00	S E	Do
19	7 a m....	40.00	S E	Ice formed during the night.
	2 p m....	49.00	S E	
	7 p m....	46.00	E	
20	8 a m....	46.00	W	Cloudy, slight frost last night.
	1 p m....	50.00	S E	
	6 p m....	47.00	S E	
21	7 a m....	44.00	S E	Rain.
	1 p m....	51.00	W	Raining.
	6 p m....	46.00	N	Still raining.
22	7 a m....	38.00	N W	Severe frost last night.
	6 p m....	45.00	N W	Cloudy.
23	7 a m....	46.00	W	Clear.
	2 p m....	54.00	W	Do
	6 p m....	54.00	S E	Do
24	7 a m....	49.00	S E	Do
	6 p m....	56.00	N W	Cloudy, appearance of rain.
25	8 a m....	54.00	W	Thunder storm and rain last night.
	1 p m....	56.00	W	Clear.
	6 p m....	54.00	W	Do
26	7 a m....	51.00	E	Thunder storm, with hail and rain.
	1 p m....	58.00	E	
	6 p m....	57.00	N W	Cloudy.
27	8 a m....	57.00	W	
	4 p m....	56.00	W	
	6 p m....	55.00	W	
28	8 a m....	48.00	W	Heavy clouds.
	2 p m....	53.00	W	
	6 p m....	50.00	N W	Do
29	7 a m....	47.00	W	Overcast.
	1 p m....	52.00	W	Appearance of rain.
	6 p m....	48.00	N W	Thunder and rain.
30	7 a m....	45.00	N W	Do do
	2 p m....	50.00	S E	Cloudy.
	6 p m....	47.00	S E	Do

OCTOBER, 1857.

Day of the Month.	Hour of the Day.	Ten p. at the hour of observation.	Direction of the Wind.	Remarks.
1	7 a m....	40 00	N E	Cloudy.
	1 p m....	44.00	N E	Do
	6 p m....	43 00	N E	Do
2	7 a m....	43.00	E	Heavy clouds.
	2 p m....	44.00	S E	
3	7 a m....	38.00	S E	
	1 p m....	48.00	S E, high.	
	6 p m....	46.00	S E	
4	8 a m....	43.00	S E	
	12 noon ..	48.00	S E	
	6 p m....	46.00	S E	
5	7 a m....	42.00	W	
	2 p m....	56.00	W	
	6 p m....	54.00	W	
6	8 a m....	50.00	E	Heavy clouds.
7	7 a m....	45.00	E	
	1 p m....	60.00	E	
	6 p m....	56.00	S E	
8	1 p m....	58.00	S E	
	5 p m....	55.00	S E	

FORT WILLIAM—THERMOMETRICAL REGISTER.

OCTOBER, 1857—(*Continued.*)

Day of the Month.	Hour of the Day.	Temp. at the hour of observation.	Direction of the Wind.	Remarks.
9	7 a m....	53.00	E	
	2 p m....	52.00	E	
	6 p m....	50.00	E	Appearance of rain.
10	7 a m....	50.00	E	
	3 p m....	57.00	S E	
11	8 a m....	52.00	S E	Heavy clouds.
	1 p m....	54.00	S E	
	6 p m....	51.00	N E	
12	7 a m....	47.00	W	Heavy clouds, slight rain.
	1 p m....	56.00	W	
	6 p m....	50.00	W	
13	7 a m....	47.00	W	Clear, fine weather.
	12 noon ..	58.00	W	
	6 p m....	56.00	W	
14	10 a m....	50.00	W	Do do
	5 p m....	49.00	N W	Do do
15	7 a m....	44.00	N W	
	1 p m....	49.00	N W	
	8 p m....	45.00	E	Cloudy.
16	7 a m....	44.00	W	
	1 p m....	45.00	W	
	6 p m....	43.00	W	
17	8 a m....	43.00	N W	Rain and snow last night.
	1 p m....	44.00	N W	
	5 p m....	41.00	N W	
18	10 a m....	39.00	N W	Slight showers of snow.
	1 p m....	41.00	S E	
	6 p m....	42.00	S E	
19	8 a m....	34.00	N	Snowing.
	1 p m....	35.00	N	Ground covered with snow.
	5 p m....	31.00	N	
20	7 a m....	31.00	W	Clear.
	5 p m....	35.00	S	Heavy clouds.
21	8 p m....	33.00	S	Clear.
	2 p m....	37.00	S	Do
	6 p m....	35.00	S	Do
22	7 a m....	32.00	S	
	5 p m....	35.00	E	
23	8 a m....	35.00	S E	
	2 p m....	38.00	E	
24	7 a m....	39.00	S W	
	2 p m....	39.00	S W	
25	8 a m....	37.00	N	
	2 p m....	38.00	N	
	5 p m....	35.00	N	Cloudy.
26	7 a m....	34.00	N E	
	6 p m....	35.00	N E	Slight shower of snow.
27	7 a m....	37.00	S E	
	5 p m....	38.00	S E	Appearance of snow.
28	7 a m....	38.00	N E	
	3 p m....	43.00	N E	
29	7 a m....	35.00	N E	
	5 p m....	32.00	N	
30	7 a m....	32.00	N	
	5 p m....	35.00	N W	
31	7 a m....	31.00	N	
	2 p m....	36.00	N	
	5 p m....	34.00	N E	

FORT WILLIAM—THERMOMETRICAL REGISTER.

NOVEMBER, 1857—(*Continued.*)

Day of the Month.	Hour of the Day.	Temp. at the hour of observation.	Direction of the Wind.	Remarks.
13	8 a m....	24.00	N W	
	2 p m....	23.00	N W	
14	8 a m....	19.00	W	
	4 p m....	24.00	W	
15	8 a m....	25.00	W	
	3 p m....	26.00	S W	
16	9 a m....	26.00	S W	
17	8 a m....	24.00	S W	
	4 p m....	27.00	W	
18	12 noon ...	21.00	W	
	4 p m....	17.00	N W	
19	9 a m....	15.00	N W	
20	10 a m....	16.00	N W	
	3 p m....	17.00	N W	
21	10 a m....	16.00	N W	
	4 p m....	-10.00	W	Light snow.
22	10 a m....	-0.00	W	
	4 p m....	-2.00	S W	Cloudy.
23	8 a m....	-2.00	S W	
	12 noon ...	7.00	W	
24	12 noon ...	2.00	Calm.	Clear and cold.
25	8 a m....	-2.00	W	
	4 p m....	5.00	W	
26	9 a m....	5.00	W	
	2 p m....	20.00	S	
27	10 a m....	23.00	S	Rain.
28	8 a m....	24.00	S	
	3 p m....	34.00	E	
29	9 a m....	34.00	E	Cloudy; rained all night.
30	9 a m....	34.00	S	
	4 p m....	34.00	S	Heavy clouds in the south.

DECEMBER, 1857.

Day of the Month.	Hour of the Day.	Temp. at the hour of observation.	Direction of the wind.	Remarks.
1	3 p m....	27.00	W	
3	10 a m....	25.00	....	Cloudy, slight snow.
	2 p m....	25.00	N W	
3	8 a m....	17.00	W	Clear.
	2 p m....	22.00	....	Do
4	9 a m....	20.00	N	
5	10 a m....	15.00	N W	Snowing.
	2 p m....	15.00	N W	
6	2 p m....	21.00	S E	
7	2 p m....	26.00	S E, a storm	Snowing hard.
8	10 a m....	24.00	N W	Cloudy.
9	10 a m....	24.00	N W	Snowing.
	3 p m....	23.00	N W	
10	10 a m....	21.00	N W	
	2 p m....	22.00	N W	
11	9 a m....	22.00	N W	
12	10 a m....	23.00	S W	Clear, dry, mild.
	3 p m....	25.00	S W	

	2 p m....	36.00	N	
	6 p m....	34.00	N E	

	2 p m....	22.00	N W	
11	9 a m....	22.00	N W	
12	10 a m....	23.00	S W	Clear, dry, mild.
	3 p m....	25.00	S W	

NOVEMBER. 1857.

Day of the Month.	Hour of the Day.	Temp. at the hour of obser-vation.	Direction of the Wind.	Remarks.
1	3 p m....	35.00	W	
2	8 a m....	34.00	N W	
	6 p m....	34.00	N W	
3	12 noon....	35.00	W	
	5 p m....	32.00	W	
4	8 a m....	35.00	W	
	3 p m....	38.00	E	Blowing a storm.
5	8 a m....	40.00	E, high.	Raining very heavily.
	3 p m....	41.00	W	
6	8 a m....	38.00	N W	Appearance of snow.
	1 p m....	39.00	N W	
7	1 p m....	35.00	N W	
	5 p m....	36.00	N E	Snow and rain together.
8	4 p m....	33.80	N W	Do do
9	7 a m....	30.00	S W	Nine inches of snow on the ground.
	6 p m....	30.00	W	Rain.
10	10 a m....	30.00	W	
11	7 a m....	26.00	S W	
	1 p m....	26.00	S W	
	5 p m....	24.00	S W	
12	8 a m....	25.00	N W	Snowing.
13	8 a m....	20.00	S W	Light clouds.
	3 p m....	24.00	S W	Dry.
14	10 a m....	21.00	S W	Dry, cloudy.
	3 p m....	24.00	N	
15	9 a m. ..	25.00	N W	
	3 p m....	29.00	N W	
16	10 a m....	27.00	W	
	1 p m....	28.00	W	
17	1 p m....	29.00	W	
18	9 a m....	19.00	N W	
	2 p m....	21.00	N W	
19	8 a m....	15.00	N, light.	Clear.
	12 noon....	14.00	....	
20	1 p m....	21.00	S W	
21	9 a m....	20.00	N	
	1 p m....	22.00	....	
22	8 a m....	16.00	W	Cloudy.
	12 noon...	15.00	....	Do
23	12 noon...	24.00	....	
24	12 noon...	14.00	N W	
25	9 a m....	12.00	N	
28	11 a m....	10.00	....	
	4 p m....	8.00	S	
28	9 a m....	17.00	W	
29	9 a m....	19.00	E	Snowing.
30	9 a m....	18.00	W	Do
	4 p m....	17.00	W	
31	11 a m....	17.00	W	

LETTER FROM THE BISHOP OF ST. BONIFACE,

RED RIVER SETTLEMENT.

The following communication has just been received from the Right Reverend the Bishop of St. Boniface, in the Colony of Assiniboia. His lordship, it will be observed, gives a very interesting account of the educational and religious establishments in his diocese, and of the gradual advancement of the half breed Indians in civilization and refinement. The absence of great crimes among them, and the facility with which little differences are arranged, speak volumes in favor of those who, regardless of personal considerations, devote themselves to their moral training and instruction. Bishop Taché has been in the country for fourteen years, and has travelled far and wide among the native tribes, and in the exercise of the duties of his high office must have had the best opportunities of observing their habits and character. His remarks are therefore of the greatest value, and will, I am confident, be read with deep interest:

RED RIVER, Feb. 7th, 1859.

DEAR SIR,—I have just received your pleasing letter of 29th December last. Not only the excellent report which you are preparing of the soil, climate, and other matters relating to the physical and geographical character of the vast country explored by you will, I am sure, be hailed with pleasure in Canada, where a strong desire prevails of obtaining information on the subject; but anything which is calculated to throw new light on, and add to, the knowledge which is now so much in request, will find ready acceptance there. I have therefore much satisfaction in contributing the information which you request of me. I regret only that the shortness of the time will not allow me to make that information as complete as might be necessary to give an exact idea of what is passing here, even to persons who have some slight knowledge of the country. The efforts made by the Catholic Clergy to extend the empire of Jesus Christ over my immense diocese, have two distinct and very different fields, which may be thus defined:

1. The ministration afforded to the Catholic population of Red River and the neighbourhood, in which, excepting some slight difference, our functions resemble those of the priests in new parishes in Lower Canada.

2. The care of the missions in the interior of the country, which are altogether heathen missions, entitled to particular attention, in order to their being perfectly understood, and yielding to the evangelical husbandman a rich harvest of merits and a glory which the world does not sufficiently regard, simply because the Kingdom of Jesus Christ is not of this world. To this division I shall attach myself in the details which it is my intention to supply.

§ 1. Aids afforded to the Catholics of Red River, and reflexions concerning them.

The Catholic population of Red River is distributed into what we conventionally term parishes. These are four in number, 1. St. Boniface—2. St. Norbert (on the banks of the Red River)—3. St. Francis Xavier—4. St. Charles (on the banks of the Assiniboine.) The boundaries of these parishes, as shown in the map accompanying the Report of Professor Hind, are tolerably exact.

St. Boniface.—Here was the first resting-place of the earliest missionaries who visited the Hudson's Bay Territory after the Conquest of Canada by the English. At the request, and with the aid of Lord Selkirk, Messrs. J. N. Provencher and T. J. N. Dumoulin landed at Fort Douglas on the 16th July, 1818, and commenced their labor of self-devotion and self-sacrifice, bestowing their first cares on a few old Canadian *voyageurs* and their families, half breeds, who were still unconverted. In 1820, was laid the foundation of the first religious edifice. This poor chapel, which was of wood, and was nevertheless destined afterwards to serve as a Cathedral, was consecrated to religious worship under the patronage of St. Boniface. The parish to which it belongs has now a population of 1400 souls. It is here that I peform the duty of a *Curé*, being assisted in it by the Rev. P. Lefloit. Two other missionaries, the Rev. Messrs. Mestre and Moulier, who arrived last summer, are passing the winter with us, awaiting the opening of the spring to be enabled to proceed to one of the posts, to which they are summoned by their pious zeal. The Church of St. Boniface, my Cathedral, is certainly not externally a monument of elegance, as you may have observed, but it is nevertheless indisputably the finest building in the country. It is 100 feet in length, 45 in breadth, and 40 in height. Its two towers, surmounted by belfries covered with tin, display the emblem of our redemption on their airy summits, at a height of 100 feet from the ground. A fine and well matched peal of three bells (weighing upwards of 1600 lbs.) adds to the joyous zest and the pomp attendant on our religious fêtes. The internal decorations of this Church are a subject of surprise to strangers traversing the wilderness, who are far from expecting to find here so much of art and good taste. In rear of the Cathedral, and overshadowed by its walls is the dwelling of the Bishop. This is a large house, in which the prelate is happy in being able to share with his clergy, the brothers of his schools, and some orphans, the small portion of his revenue which is not employed in other good works. The Parish of St. Boniface has the advantage of possessing excellent schools. Until May last, the boys' school of the brothers of the Christian Doctrine was kept in the bishop's house; but since that time, the brothers and their pupils have taken possession of a large house built for them, a few hundred feet from the cathedral. Here I cannot refrain from expressing the feeling of gratitude which warms my heart at the sight of that house. In 1852, a terrible fire destroyed a considerable portion of the City of Montreal. Scarcely had the fiery and destructive blast passed away when the soft and refreshing breath of charity stirred the still smoking ashes, and wafted to the Red River a lesson too advantageous to its friends to be lightly forgotten. The faithful at Montreal, at the instance of their chief pastor, in order to appease by their good works the anger of Heaven, shewn by so terrible an infliction, desirous moreover of fulfilling the conditions imposed by the Sovereign Pontiff to entitle them to the indulgences of the Jubilee, made a collection for the benefit of Red River, which produced the sum of £364. This was to be expended in the foundation of a school. To this liberal act of charity we are indebted for the means of erecting the beautiful house in which 58 boys are now receiving their education. On the other side of the cathedral, at an equal distance from it is the "very spacious Convent" mentioned by Mr. Hind in his report. I am sorry that the learned professor, in speaking of this Convent, found nothing to speak of more interesting than the cultivation bestowed on the garden in front of it. The cabbages and other vegetables produced in it are no doubt very fine, nevertheless the interior of the house, and the extensive benefits dispensed by its inhabitants, are matters still more worthy of admiration

and comment. This Convent belongs to the Sisters of Charity, known in Canada as the Grey Nuns. These heroic followers of Christ, animated by a degree of courage and devotion which Catholicism alone can inspire, journeyed to this remote spot to dispense among the youth of their own sex, and among the population in general, the blessings which they diffuse wherever they go. The amount of good effected in this establishment, the mild and salutary influence exercised by the sisters in the bosoms of families, the thousands of good deeds which the eye of the world sees not, because the charity which prompts them seeks the veil of humility, can never be fully told. In this Convent young ladies are boarded, and receive, I do not say a passable education, but an education suitable for the middling classes of the most civilized countries. They are now twenty in number. This school, in which the intellect is trained to a knowledge of the beautiful, the useful, and the agreeable, while the education of the heart is not neglected, is, I have not the least doubt, by far the best in the whole colony of Red River. Even those persons who are afraid to acknowledge it openly, are fully aware of it. Besides the boarders, the sisters maintain and educate (in a separate apartment, unconnected with that of the boarders) fifteen poor orphan girls. This admirable work is achieved by sacrifices of all kinds, self imposed by the adopted mothers of these poor children; and what is here beheld will forcibly illustrate the triumphant working of charity even without extraneous aid. In addition to the education thus afforded to thirty-five inmates of their house, a day-school is kept for all the little girls of the parish who are desirous of instruction. Moreover, besides the labor thus bestowed on education, the Sisters of Charity are unwearied in the services and attentions which they minister to suffering followers of Jesus Christ. The following short note may give an idea of the good done by them in this behalf:

	Sick persons attended.	Visited at their own abodes.
From Oct., 1856, to Oct., 1857.....	175	210
do 1857, do 1858.....	157	130

	Wounds dressed.	In hospital.
From Oct., 1856, to Oct., 1857.....	53	21
do 1857, do 1858.....	58	21

A knowledge of these facts should accompany Professor Hind's remarks, at page 366 of his report, in order to enable you to form an idea of the salubrity of the climate, in accordance with the rule laid down by that gentleman. To these numerous, important, and nearly gratuitous services rendered to the population of this parish by the sisters at St. Boniface, we must add the strong influence which they exercise over the community. To their lessons of industry, economy, &c., we must attribute the very perceptible change which has taken place in the population since the arrival of these generous nuns. The internal decorations of the church and other objects of art and taste, are the work of the inmates of this vast convent, around which certain persons can see nothing but well cultivated vegetables.

2. St. Norbert.—This new Parish has a population of 700 souls. The Rev. P. Lestane is the Pastor of this little flock. The chapel, built of wood, is an edifice of 90 feet in length, by 33 in breadth. At one end are the apartments of the Priest, the teacher, (who, in this case also, is happily a brother of the Christian Schools. This good brother has 31 children to teach. The girls, 29 in number, are confided to the care of the Sisters of Charity, who have their dwelling near the Church; a happy symbol reminding us that the only true and solid education is that which is based on religion.

3. St. Francis Xavier.—This Parish dates from 1824. The population consists of nearly 1200 souls, permanent residents, not including several hundreds of hunters who pass the year on the prairies, but at certain times visit the colony. Some no doubt take up their abode in other parishes, but most of them stop short at St. Francis Xavier. This parish is known by the name of the Prairie of the White Horse. The old wooden chapel, now too small for the population, threatens to fall. We have accordingly begun to collect materials for a new church. The senior of our missionaries, Mr. Thibeault, my Grand Vicar, is the *Curé* of this parish. He has exercised his sacred office in this diocese for twenty-six years, speaks the Cree language very well, and understands that of the Sauteux. This knowledge is indispensable in his situation, as a great number of those who require the exercise of his sacred functions know no other language. The Parish of St. Francis Xavier has only one school, which is kept by the Sisters of Charity. Here 13 boys only and 26 girls receive instruction.

4. St. Charles.—This Parish contains only 210 persons. There is neither church nor chapel. Divine service is performed in a house which serves as a temporary chapel. The congregation have neither school nor resident Pastor. When it is practicable, a priest proceeds thither from this place to officiate. In other circumstances, the worshippers are obliged to go to St. Boniface or St. Francis Xavier.

LAKE MANITOBA.

To these details I may be permitted to add a few words concerning another establishment, commenced last summer at the extremity of Lake Manitoba, for the convenience of 30 or 40 families who are settled there. This small community have built a chapel. Mr. Gascon resides at the post, and has so much the greater merit in his good deeds, that although connected with the colony, he derives no advantage from the connection.

I have thus, my dear Sir, given you a full account of the religious comforts afforded to the Catholic population of Red River. Far then from being neglected in this respect, they possess a full measure of this essential blessing. Considering the sparse character of the settlements, the schools would need to be increased in number in certain districts, but the absence of any law relative to education, and of zeal in the people themselves, renders it utterly impossible to do more. I venture to assert what all reasonable and impartial persons must, in view of what is done, acknowledge, that the result far transcends the means which we can command. The truth is that, but for the unselfish zeal of some who devote themselves without fee or earthly reward to the arduous and meritorious task, it would be absolutely impossible to keep up the schools. So far, scarcely one child in ten has paid for his schooling, although the charge does not exceed ten shillings per annum, and I am certain that if we insisted on the payment of even that trifling sum, many of the scholars would leave the schools, such is the carelessness and indifference of the parents in that respect, notwithstanding our oft repeated entreaties and the sacrifices which are made in that behalf. This indifference concerning the education of their children and neglect of the many advantages afforded them is a standing reproach which may be justly cast on our population. I do not say that this is their only fault. Alas! the history of mankind, study it where we may, gives us much food for regret on the score both of omission and commission. I am desirous here to correct an error sorely injurious to us, into which nearly all the writers on this country have fallen. A fixed idea seems to have been entertained by them generally, at least a stereotyped expression of it appears in all their works, intended to establish an humiliating and unjust comparison between the half breeds of French Canadian parentage, and those of a different origin. I have neither the wish nor the time to controvert all the absurd things that have been said on this subject. One word only I shall say relative to this idea, as it is propounded in one of the best books which I am acquainted with on this country. In his Arctic Searching Expedition, Sir John Richardson remarks at page 273-4: "In character the half breeds vary according to their paternity; the descendants of the Orkney "laborers" being "generally steady, provident agriculturists of the Protestant "faith; while the children of the Roman Catholic Canadian "Voyagers have much of the levity and thoughtlessness of their "fathers, combined with that inability to resist temptation, which "is common to the two races from whence they are sprung." It is not necessary either to have been the inventor of gunpowder or to have enriched the domain of science by any important discovery, in order to detect, at a glance, the tendency of these remarks, and the spirit which dictated them. For my own part,

I have been in the country nearly fourteen years, I have come in contact with half breeds of every extraction, and I have as yet failed to discover the grounds for any such distinction. I repeat once more, that my affection for our Canadian half breeds does not make me look upon them as perfect or free from defects, but it is also true that I have not found any greater degree of the same perfection among the others.

Every nation has its weak side, but counterbalanced by qualities which others do not possess, and in judging of a people it is not wise to select one particular point in its character, which may be defective, it is necessary, on the contrary, to estimate the good or bad inclinations of that people, as a whole, making every allowance for the circumstance in which it is placed, the centre in which it lives.

Looking at the matter in this light, I have arrived at the firm conviction, in spite of multiplied assertions of the contrary, that our Canadian half breeds are no worse than the others. I belong myself (and I thank heaven for it) to this French Canadian race, the subject of these remarks, and if, as the learned and respected author of the above mentioned work affirms, we had shared "the inability to resist temptation," I should have given a proof of my origin by not resisting a temptation which I have often experienced. This temptation consists in the publication of certain memoirs relating to the history of this country, which would indeed be the saddest page in French Canadian history, but, at the same time, a proof amounting to a demonstration, that even in this matter my fellow-countrymen have played but a secondary part, and that our race has never been sufficiently favored to enjoy a monopoly of crime any more than any other monopoly. Besides the complete tranquillity and freedom in which we spend our days; our ignorance of the precautions everywhere else considered indispensable to ensure security of life and property, and the facility with which any little differences which may arise, are appeased; the utter absence of great crimes, though we have no police to preserve order, (it is well known to every one that the tranquillity we enjoy is in no way owing to the presence of the troops;) the horror excited by the simple recital of what occurs in other places; the polite, affable and hospitable manners of our people, notwithstanding the little instruction they have received; does not all this prove, in spite of all that has been said and written against them, that the French Canadian half breed race are a gentle, moral and honest people? Were I called upon now to enumerate their defects, the list would no doubt be a long one; no one is better aware of it than I am, for no person is more anxious to remedy the evil; but I have no desire whatever to follow the example of some who lavish their praises on those of the same origin and belief with themselves, and have nothing but contempt for others. There is one thing certain, here as elsewhere, some of those who have been the greatest calumniators of their fellow-men have, in fact, been guilty of shameful crimes and monstrosities, which those whom they do not fear to overwhelm with contempt and insult, were incapable of committing.

As to myself, there is one thought which occupies my mind in the midst of all the movement and agitation at present existing with reference to the Red River country. As you say, "the country is open, the tide of emigration is about to pour into it." I am an exile, though a voluntary one, from my country, cut off from every thing that I held dear in the world before coming here, exposed equally with all those who surround me to the inconveniences resulting from our isolated position, and it is, no doubt, very gratifying to me to see the distance, which separates me from my native land, as it were shortened, and to be brought nearer to the friends whom my heart continues to love so much, to see my adopted country on the eve of enjoying the advantages intended to be procured for it, and yet in view of all this, I experience something like a feeling of pain, for it appears to me that while making a great gain, we shall perhaps also lose much. At all events I fancy that we are about to be deprived of much of the tranquillity which we now enjoy; this unbroken quiet may appear very insipid to those who are habituated to the bustle of business or the noisy stir of great cities, but it possesses an especial charm for the mind of one who has lived for many years in solitude and away from all agitation. Undoubtedly, and I cannot lose sight of the fact, there prevails throughout the country a general feeling of uneasiness about our present political condition, but notwithstanding this, my views are too narrow and contracted to enable me to anticipate any great beneficial results. I am well aware that the system proposed for us is, in the abstract, very far superior to our present system, which is in fact an anomaly, and yet I very much fear that it will be a long time before we shall reap any benefit from it. Whatever may be the result, the movement is an actual fact, and we must cease to be what we have hitherto been, an exceptional people. Red River will no longer be the oasis in the desert, it is about to lose this distinctive and poetical characteristic, and become as it were the mere suburb of some great city. A large number of strangers have already reached us during the last summer, and this immigration cannot fail to increase. I am a French Canadian in heart as well as by origin, and I should undoubtedly prefer to see our lands occupied by some of our *brave* and *respectable inhabitants* from Lower Canada. In the present condition of the Red River Settlement, those who have large families are not the persons who should come; we are more in want of arms than of mouths. A company of soldiers and the exploring parties who visit the settlement suffice, as it is, to create a famine. The price of many of the necessaries of life has doubled since last year, and although the harvest was pretty good, and hunting and fishing abundantly successful, nevertheless, there is an extreme scarcity of every thing. Young *married* men, farmers or tradesmen, would have the best chance of success here. Although I have said that I should prefer to see our lands occupied by settlers from Lower Canada, it is not that I wish to advise my fellow countrymen to leave their homes; far from it. On the contrary, it seems to me that our beautiful country is worthy of retaining and rich enough to support, all those who are born upon her soil. For my own part, had not motives of a higher order determined my will, had not a voice stronger than the voice of nature and of blood sounded in my ears, never could I have consented to break the link that bound my heart to the land of my birth. The bread of exile is so bitter, the strange land so barren, even in the height of its fertility, that the word "good bye" has always seemed to me the most painful in the vocabulary of the human heart; I am, therefore, very far from wishing to encourage the Canadians to emigrate, but if, owing to special and exceptional reasons, they are compelled to remove from their native land, if they are determined to take up the pilgrims' staff, rather than see them take the direction of the United States, I prefer to have them come here. Here their faith, at all events, will not be exposed, and if they be deprived of some material advantages, these will be compensated for by others of a higher order. Their children will here find masters and mistresses to enlighten their minds, and at the same time to train their hearts to virtue. Daily experience enables me to promise them zealous priests, who will be true fathers to them, and who, here as they did at home, will preach to them in their own mother tongue, the goodness of their God and the love which they owe him. Another thing which I can promise them is the affectionate interest which is, and ever will be, entertained for them, by the pastor whose flock they will come to join. The Bishop of St. Boniface, a Canadian like themselves, their brother, therefore, and their friend, will be really rejoiced to have it in his power to assist them, and willingly engages to devote to the welfare of the new comers, as well as to that of the rest of his people, everything at his disposal. Besides, no one has a better right to occupy the valley of the Red River, or even the valley of the Saskatchewan, than the Canadians of French origin. Our fathers were the hardy champions of civilization who first penetrated these regions, influenced by motives far superior to the low interests of commerce; these brave, and skilful discoverers came at the call and in the company of the missionaries, to raise the standard of the cross in the vast prairies of the West. Ev.. days have since come upon the beautiful portion of the American continent which they reclaimed from barbarism, but after a century of struggles and constancy, our

nationality shines out before an astonished world and nothing can be more natural than that our brethren should once more take possession of the land discovered by their ancestors, and consecrated by them as destined to witness at a future time the regeneration of the unfortunate tribes whom they found inhabiting it. Besides, the chain which connects Canada, and especially French Canada, with the Red River, has never been broken. Ever since the occupation of our country by the power which protects us so well to-day, the intrepid and skilful *voyageurs* have still continued to be recruited from amongst our fellow countrymen. They occupy an inferior position, under the circumstances, but their services have been acknowledged as indispensable. At a later period, French Canadians have here acquired claims, of which they cannot without injustice be deprived. There is one name deserving of the most prominent and honorable mention from every historian of the colony of Assiniboia, it is the name of a French Canadian, Mgr. J. N. Provencher, first apostle and first Bishop of the diocese, who succeeded in gaining the love and respect of all, the father of the poor whom he suffered so much in relieving, and the friend of the rich, who admired his virtues. In many instances the paternal influence of this worthy prelate prevented the commission of crimes which would have caused the ruin of this colony, while the wisdom and firmness of his counsels prevented the adoption of measures calculated to bring about the same misfortune. Without wishing to detract in any way from the merits of those to whose good offices it stands indebted, I think it is but just to assert that Mgr. Provencher has been one of the main props of this colony, and that but for him it would have been destroyed on more than one occasion.

Would that the limits of this letter but allowed me to give free vent to my gratitude, as chief pastor of the Catholic population of this colony, for the benefits with which our generous country has overwhelmed us, but I am not writing a book, and I must restrain within my heart the thoughts that struggle for utterance.

*** The remainder of this letter was not in time to appear with this Report.