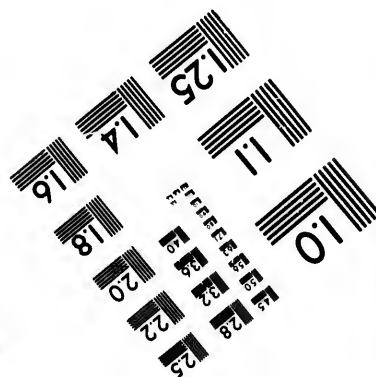
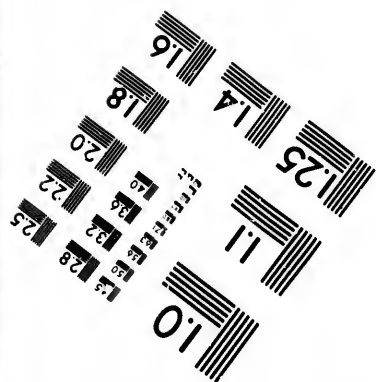
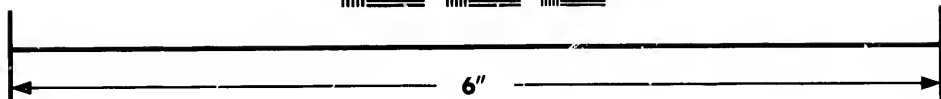
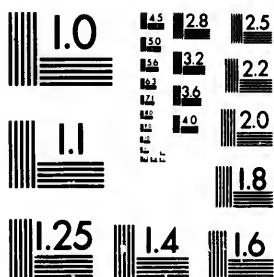


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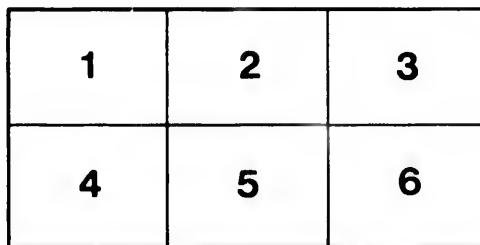
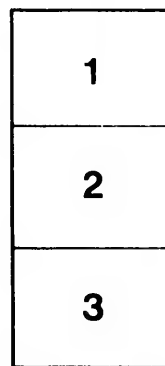
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OTTAWA, 20th April, 1868.

SIR,—I have the honor herewith to submit to your consideration
a Report on the Line of Route between Lake Superior and the Red
River Settlement, with an Estimate of the cost of opening the com-
munication in the manner therein suggested.

I have the honor to be, sir,

Your most obedient servant,

(Signed,)

S. J. DAWSON,

Civil Engineer.

Hon. Wm. McDougall, C.B.,

Minister of Public Works, &c., &c.,

Ottawa.

REPORT

ON

THE LINE OF ROUTE

BETWEEN

LAKE SUPERIOR AND THE RED RIVER SETTLEMENT.

In reporting as to the best means of opening a line of communication between Lake Superior and the Red River Settlement, I beg to be permitted, in the first place, to refer briefly to the operations of the Red River Expedition, carried on for several years under my direction, as it will, I doubt not, be satisfactory to the Government to know that the suggestions which I have the honor to submit are not the expression of mere theoretical views, but the result of long-continued investigation, under official instructions from the Canadian Government.

The earlier Reports of the Expedition were printed by order of the Legislature, but those sent in during the last year of its operations have never been published. The present Report will contain all that is believed to be of immediate importance in these documents; that is, in regard to the subject under consideration.

The following Maps are annexed for convenience of reference:—

1. A Plan, on a scale of two miles to one inch, showing the country between Thunder Bay and Lac des Mille Lacs, Dog Lake line of road, position of dam, &c.

2. A Plan of the Lake Region, on a scale of four miles to one inch, showing the country between the Height of Land and Fort Frances.

3. A Plan on a scale of ten miles to one inch, showing the country between Fort Frances and Fort Garry.

4. A Map, in profile, showing the relative altitude of the Routes by Pigeon River and the Kaministaquia.

Plan No. 3 might be lithographed at small cost, and I think it would be advisable to have it published, as it is the only correct one of the section which it exhibits.

The Red River Expedition consisted at its outset of three distinct parties, receiving their instructions from three different Departments of Government. One of these was under my direction, one under Mr. Napier's, while Mr. Gladman, a retired officer of the

Hudson's Bay Company, who had the guidance of the Expedition on the journey to Red River, had a separate party of his own.

The parties thus organized set out in July, 1857, and proceeding by the usual canoe route from Fort William, made numerous explorations, determined the levels as they went, and eventually arrived at the Red River Settlement in the fall of the same year.

Mr. Gladman, after a short stay, returned by the way he had come to Toronto, where his connection with the Expedition soon afterwards ceased, while Professor Hind, who I should have mentioned had been attached to the party as geologist, proceeded by way of the Red River over the prairies to St. Paul.

My assistants at this time were Mr. Lindsay A. Russell, Mr. J. F. Gaudet, Mr. Alex. W. Wells and Col. C. de Salaberry. The three first-named gentlemen were surveyors, all of whom are of high standing in their profession, while Col. de Salaberry acted chiefly as Commissary—an important office in a region where provisions were not always very abundant.

The winter of 1857-58 was chiefly occupied in exploring the country between the Lake of the Woods and Red River, a region at that time but little known, and reported to be impassable in summer, on account of swamps which were said to cover the greater portion of its area. At the same time, an instrumental survey was made, so as to connect Fort Garry with the survey made many years previously by the Boundary Commissioners, under the treaty of Ghent. This enabled us to establish with accuracy the longitude of Fort Garry, which, on the maps then in use, was set down as much as twenty-one minutes too far to the west.

The party were also able, before the opening of navigation, to explore the Rosseau River and make an instrumental survey of the Red River and Lake Winnipeg, between Fort Alexander, at the mouth of the Winnipeg River, and the Boundary Line at Pembina.

Immediately after the opening of the navigation, having organized a party of half-breed Indians and procured canoes, we proceeded by way of the Manitoba and Winnepegoos Lakes to the great Saskatchewan River, and examined the rapids and impediments to the navigation between Lac Bourbon and Lake Winnipeg. The levels were determined with care, and the "Track Survey" which we had made of the Lake Coasts, as we proceeded, was corrected as often as possible by observations for latitude and longitude.

Separating our party at the Mossy Portage, the name by which the path between Lake Winnepegoos and Lac Bourbon is called, I sent Mr. Wells to explore Lac Dauphin and survey the route by way of the Little Saskatchewan and Lake Winnipeg to the mouth of the Red River, appointing the 1st of July following to meet him at the settlement.

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Taking with me my assistants, Mr. Gaudet, and Mr. de Salaberry, and a few Indians, I ascended Swan River, crossed from thence to Fort Pelly, and descended by the Assiniboine to Fort Garry, having on this excursion obtained much information, as to the soil and climate of a very extensive district, and made such observations as enabled us to delineate its geography with tolerable accuracy.

Throughout the entire period during which our head quarters were at the Red River Settlement, a Meteorological Register was kept, regularly, under the supervision of Mr. Russell, and it has since been of considerable value, as, taken in connection with some reliable observations made by others, it has served not a little to dispel the absurd ideas which at one time prevailed in regard to the severity of the climate and the duration of the winters.

On the 4th of July, 1858, our party was once more assembled at the Red River Settlement, and having with some difficulty procured supplies, we set out, with all possible dispatch, for a more thorough exploration of the country between Rainy Lake and Lake Superior. Among the instructions received from the Government at this time were the following:—

“SECRETARY’S OFFICE,

“Toronto, 16th April, 1858.

“SIR,—Adverting to the last paragraph in my letter to you this day, I have the honor to inform you, that it is not thought necessary to make any alterations in the instructions for your future operations, contained in the Order in Council of 29th January last.

“You will therefore consider these instructions, so far as your explorations are concerned, still in force.

“I am to add, however, that if time allows it, you will endeavor to survey the road between Gun Flint Lake and Pointe de Meuron, and when returning from the North-west Corner of the Lake of the Woods and passing through Rainy Lake, make occasional traverses when practicable, with a view to ascertain the extent of arable land in that locality.

“I am further to state that His Excellency, having every confidence in your judgment, does not think it right to trammel your movements by detailed instructions, and that you are therefore at liberty to make any other explorations in addition to those particularly mentioned in the instructions already conveyed to you, should you, upon the information obtained in the locality, deem it desirable you should do so.

“I have the honor to be, Sir,

“Your obedient servant,

(Signed)

“T. J. J. LORANGER,

“Secretary.”

“S. J. Dawson, Esq.,

“Civil Engineer in command,

“of the Red River Expedition.”

From that time forward, for the remainder of the season, and during the winter of 1858-59, our explorations were confined chiefly, I may say exclusively, to the country between Rainy Lake and Lake Superior. Two well appointed parties were kept constantly at work, and sometimes three. Instrumental surveys were carried from Lake Superior, westward, through Dog Lake, Dog River, Lac des Mille Lacs and the Seine, to within a short distance of Rainy Lake. The levels were taken from Jourdain's Rapid to Dog Lake, and from that Lake across, by the line laid out as a road, to Lake Superior.

In the spring of 1859, having learned that a party fitted out by the people of Red River, who at that time took a great deal of interest in promoting the development of the country, had been baffled in an attempt to take horses through to the Lake of the Woods, had in fact got bewildered in swamps, from which they had experienced much difficulty in extricating themselves, and as the impression as to that section of the country being impracticable for roads was thus gaining confirmation, I hastened to the Lake of the Woods, with the most active of my assistants, and proceeding to its western extremity had the good fortune to secure the services of an Indian Chief, who undertook to show us ground on which the country could be crossed.

Leaving my assistants to find their way across with the Chief, I proceeded by way of the Winnipeg to the Red River Settlement, where I had not long to wait for their arrival. They reported that the Chief had led them to a gravelly ridge which extended, with but few breaks, for a long distance across the most swampy parts of the country, and that the remains of Indian encampments showed that it had been much used as a pathway, in times long past.

A number of men were immediately engaged in the Settlement and sent to open the line which had been traced, in such a way as to render it passable for horses; and over this line *our party rode clear through to the Lake of the Woods, on horseback.*

The line thus opened was used afterwards as a Post road for the conveyance of Mails on *horseback*, and it requires but slight knowledge of engineering to understand that ground, over which horses can be ridden, is not so swampy as to be impracticable for roads.

Returning again to Rainy Lake, we made a more thorough examination of the Lakes, by the old canoe route, than we had previously had an opportunity of doing, and the result led me to the conclusion that, considering the long reaches of navigable water on that route, it could be rendered available, in the first instance, to greater advantage and at less outlay than the line by the Seine, which had been examined and reported on the previous year.

Arriving at Lake Superior, I was joined by my assistant, Mr.

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Wells, who had spent the whole summer in examining the country about the Height of Land and Lac des Mille Laes. The fall being now far advanced, the parties were gradually withdrawn, such of them as we had left at the Lake of the Woods returning only in the beginning of November.

To sum up, the explorations and surveys were thus continued, uninterruptedly, for three summers and two winters. There were generally three well-appointed parties simultaneously at work, in different sections, and, whether at Lake Superior or the Lake of the Woods—the one a swampy and the other a hilly region—they always availed themselves of the aid of the natives, whose occupation of hunting, pursued from youth to age, within particular areas, rendered their local knowledge of the greatest value.

A considerable period of time has now elapsed since the operations of the Red River expedition were brought to a close, and since that time there has been no further exploration whatever in the country between Lake Superior and the Red River Settlement, so that such of our preliminary Reports as have been published are the only sources of information generally available.

Having thus briefly alluded to the surveys and explorations made by me, or under my direction, I proceed to describe the different sections of the country in detail, pointing out, as concisely as possible, the works and improvements required, and the reasons for adopting particular lines of route or starting points.

For the sake of convenience, in description, the country between Lake Superior and the Red River Settlement may properly be regarded as forming four divisions.

The first, embracing the region to the east of the water-shed, or Height of Land, will be referred to as the "Lake Superior Section."

The next, extending from the Height of Land to Fort Frances, I propose to designate as the "Lake Region."

The navigable reach, extending from Fort Frances to the north-west angle of the Lake of the Woods, will be called the "Lake of the Woods Division."

While that between the north-west angle and the Red River Settlement may not inappropriately be known as the "Fort Garry Section."

LAKE SUPERIOR SECTION.

The country between the Boundary Line, at Pigeon River, and the head or eastern end of Thunder Bay, was carefully examined with the view of finding a practical route from Lake Superior to

some one of the water systems leading from the Height of Land, westward, to Rainy Lake.

On all the routes, proposed or suggested, I had at various times during the progress of the expedition, reported to the Government, so that, here, I need only state the leading advantages or objections which attach, respectively, to each.

THE PIGEON RIVER ROUTE.

The nature of this route, and the objections to it, will be found pretty fully stated in my preliminary reports, printed by order of the Legislature.—Pages 7 and 27.

The starting point is entirely within the United States territory, and, for a distance of one hundred and fifty miles, the canoe route forms the Boundary Line. But this is far from being the only objection. The ascent from Lake Superior is very rapid and steep, and at the Height of Land, and far to the westward thereof, the route leads over a very high and broken region. The lakes at the summit of the water-shed are 1,058 feet above the level of Lake Superior, and, even at that elevation, are embosomed in rocky hills which rise to the height of several hundreds of feet around them. Moreover, the supply of water is so inadequate as to forbid the idea of improving the navigation, and there is no source from whence a supply can be obtained. The route itself is at the summit of supply, and touches in its course on the head waters of no less than four different rivers.

Between Pigeon River and the Kaministaquia, there are several good harbours on the coast, but from these access to the interior would be exceedingly difficult, and could only be provided at enormous outlay.

It was at one time suggested that a practicable line might be found by which to cross the country from Pointe de Meuron, so as to join the Pigeon River Route, to the westward of the Height of Land. This point I was instructed to investigate, and accordingly despatched Mr. L. A. Russell, with a well-appointed party, to explore in the direction which had been indicated. He ran a line from Pointe de Meuron to Gun Flint Lake, a distance of some fifty-four miles, and examined the ground on either side thereof, but his report and field notes show that the country which he traversed was too rough and impracticable to admit of an available line of communication.

In concluding my notice of this route, I may say that, for a distance of one hundred and thirty miles from Lake Superior, westward, it cannot be made in any way available as a line of water communication, except for small canoes; that the country being for a great part of the distance rugged, mountainous and cut up

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with lakes, it is next to impracticable for roads, and, finally, that there being a much better route to the eastward, entirely within British territory, there would be no object in attempting to open this line, or spending further sums in its exploration.

KAMINISTAQUIA ROUTE.

This is the old canoe route of the North-west and Hudson's Bay Companies. On this line the supply of water is ample, and the elevation of the country at the summit of the water-shed less, by some two hundred feet, than on the Pigeon River Route, while it is at the same time, that is, at the turn of the water-shed, comparatively level and practicable for roads. Dog Lake, a large sheet of water on the Kaministaquia, twenty-four miles inland from Lake Superior, extends for a distance of some twenty miles in a direction nearly parallel to the western coast of Thunder Bay. To the westward of this lake, the principal stream which supplies it with water—Dog River—can be made navigable nearly to the Height of Land (and it will be so when a dam now in progress of construction is completed), so that, between river and lake, an available reach of some thirty-five miles could be commanded. It became, therefore, a matter of importance to find access to this navigable reach, and with this end in view, the levels of the Kaministaquia were determined, and the country between Dog Lake and Lake Superior explored.

Dog Lake was found to be at an elevation of 718 feet above the level of Lake Superior, and the intervening country proved to be extremely mountainous and rough, while the difficulties by water were of a still more formidable character.

The Kaministaquia, after leaving Dog Lake, runs nearly south to its confluence with Fish River, then eastwardly to Pointe de Meuron, and thence north-east to its discharge, making a sweep of sixty miles before it reaches Lake Superior; and as it has in that distance to get down a declivity of 718 feet, its character, in regard to its capacity for navigation, may be easily imagined. It affords, however, an available, although a difficult route for canoes; but, for large craft, it could only be made navigable at an outlay which no circumstances likely to arise would warrant.

A land road to Dog Lake, therefore, became indispensable, and, after much careful investigation and exploration, an available pass was found and a line laid out, and on this line during the past summer a fair commencement was made, and six miles of road, reckoning from Thunder Bay, completed.

The starting point is at a place called the Dépôt, on Thunder Bay, about three miles to the eastward of the mouth of the Kamin-

istaquia, and at this point there is, in my opinion, every facility for constructing wharves and forming a perfectly safe harbour.

The Kaministaquia, itself, has been strongly recommended as a harbour, but, in its present state, it is inaccessible to vessels drawing more than five and a half feet of water, on account of a bar or shoal of great extent at its mouth. Its adoption would involve the dredging of a channel, and the construction of extensive piers or walls of heavy crib work, on either side thereof, to prevent it from being filled up by the action of the ice which, at certain seasons, ploughs over the bar. Another consideration, which should not be lost sight of, is that the causes which produced the shoal are still in operation. Quantities of sediment are brought down with every freshet, more especially in the spring, and the dredging would have to be repeated at intervals to keep the channel, once formed, open.

Everything considered, therefore, I would not for the present recommend the Government to undertake the dredging of the Kaministaquia, and the construction of extensive works to keep the channel so formed from filling up. The first great object is to open the communication with Fort Garry; and, when that is accomplished, there will be no lack of means, from private sources, or of enterprise, to render the Kaministaquia an accessible harbour. In the meantime, it might seriously affect the enterprise if large sums were to be expended at its very outset *on merely local works*.

Fort William is, however, even at present, accessible to the smaller class of schooners or fishing vessels which navigate Lake Superior. It is, besides, a place of importance as being the centre of such trade as is carried on, and it will gradually become of increased consequence, as the mines in the vicinity are developed, and the fertile portion of the valley of the Kaministaquia fills up with settlement. For these reasons, it is expedient to connect it by a branch line with the Dog Lake Road, as shown on the accompanying plan, and for this purpose I have included a sum of seven thousand dollars (\$7,000) in the estimate, which I have now the honor to submit.

Before concluding this subject, I would call attention to the fact that many persons who take a deep interest in that part of the country are under the impression that by going up the Kaministaquia to Pointe de Meuron, or as far as the navigable water extends—a distance of some ten or twelve miles—the length of land road, which would then be required to reach Dog Lake, would be by so much shortened. But this is a mistake. Pointe de Meuron is, in an air line, somewhat further than either Fort William or the Dépôt from Dog Lake, and there would, consequently, be no object in taking cargoes up a narrow channel to a point which brought them no nearer to their destination. The branch line should, there-

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fore, start from Fort William and not from Pointe de Meuron. From the former place the Dog Lake Road can be reached in six or seven miles, while, from the latter, ten at least would be required, with corresponding increase in the outlay. A glance at the map will show clearly what I have endeavoured to explain.

It has been objected to the Depôt as a starting point, that it is shelterless, and that the ice will tear away any wharves that can be built.

Now, on reference to the map, it will be seen that Thunder Bay is itself a harbour, although of somewhat large dimensions, completely land-locked and sheltered from every wind; any swell therefore, which can be felt must arise within the Bay itself. The huge surges of Lake Superior do not roll into it at all, and it may be regarded for all practical purposes, in relation to the subject under consideration, as an inland lake. Looking upon it in this light, the starting point at the Depôt is in a Bay of moderate depth, completely sheltered from the prevailing winds, which are westerly. A glance at the map will show that it is safe from winds blowing from the west, south-west, north and north-west; and, I may add, that a wind blowing from a direction fifteen or twenty points to the east of north, would not affect it. East, or south-easterly winds, alone, would blow in upon the harbour, but the extent of their sweep would be limited to the width of Thunder Bay, and the surge which could arise in that distance may easily be guarded against. That the swell has no great effect in Thunder Bay, at any time, is demonstrated by the fact, that the trees grow clear down almost to the level of the water, indeed, in some places, dipping their branches into it; whereas, in exposed parts of Lake Superior, the wave-lashed shores are destitute of vegetation.

It has been said, moreover, that the ice would carry wharves away, and, as convincing proof of this, a boulder was pointed out to me which had been shoved ashore by the ice. I merely notice this to show the sort of arguments which have been advanced to disparage Thunder Bay and promote the Kaministaquia. If wharves cannot stand in the tranquil waters of a land-locked bay they can stand nowhere, and those who object to them in Thunder Bay, on the score of ice, can have had but little experience of such a river as the St. Lawrence, where wharves are built to resist ice rushing against them in immense fields, with the full force of the spring floods, as is the case at Three Rivers when Lake St. Peter is breaking up.

Among the advantages which the Depôt at Thunder Bay possesses, may be mentioned the facility of approach or departure to sailing vessels, as they would have ample sea-room to beat in or out, which they could not have in a narrow river like the Kamin-

istaquia, with a shoal at its mouth extending a full mile from the coast; and a very important point to be considered is that Thunder Bay, as compared to the Kaministaquia, opens earlier in the spring and remains open later in the fall. As an instance of this, it may be remarked that, in the fall of 1866, when the steamer *Algoma* made her last trip, the Kaministaquia is said to have been frozen over, and that so strongly that the people of Fort William were skating on the ice.

From the Depôt, eastward along the shore of Thunder Bay, the ground for a distance of several miles is practicable for a road, and there are facilities for the construction of wharves, in various places, more especially at a point a little to the eastward of Current River, where there is a small natural harbor, which, by means of piers, might be sufficiently extended.

It was at one time believed that the upper or eastern end of Thunder Bay, affording as it does an excellent natural harbor, would have been a favorable point from which to run a line of road to Dog Lake, but a careful examination showed such a line to be impracticable, within any reasonable limit of expenditure, on account of the rugged nature of the country over which it would have had to pass. Moreover, to have adopted the head of the bay would have increased the distance to be navigated by some forty miles, that is, including the addition both in Dog Lake and the bay.

Referring again to the locality which has been chosen as the starting point at Thunder Bay, it is admirably adapted for the construction of wharves. The water deepens uniformly and gradually from the shore, until, at a distance of five hundred feet, it has a depth of three fathoms and a half. Timber suitable for the work is very abundant on the Kaministaquia, whence it could be easily floated down, and on various parts of the shores there is abundance of loose stone for filling the piers, and the fixed rock, close at hand, is of a nature to be easily blasted.

At present, it is proposed merely to sink an isolated pier or breakwater, at which vessels can discharge their loads, doing in fact no more than is necessary to facilitate the landing of material and supplies for the works, leaving it to a future consideration whether the wharves shall be extended at the public cost, or left to private enterprise.

I conclude this part of the subject by noticing still another route which has been advocated, namely: the

NIPEGON BAY ROUTE.

Among the many schemes recommended for opening the Northwest Territories, the head of this bay has been suggested as a point

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of departure, chiefly on the ground that it affords an excellent harbour, and that, by its adoption, the distance to be navigated in Lake Superior would be somewhat shortened.

It is not, however, without its objections, and a conclusive one will be found in the fact that it is too far to the eastward of the line which it is proposed to open to render its adoption in any way expedient. It would, in fact, involve at the outset a land road of ninety or a hundred miles to reach the nearest point beyond the water-shed, without any compensating advantage. Moreover, Nipegon Bay, being completely land-locked, is said to be very late of opening in the spring, and the access to it is reported to be so intricate as to require light-houses and beacons to render it safe; whereas, Thunder Bay is remarkably easy of access, and has been for many years approached, night and day, without the occurrence of an accident.

I may further state that a road from Nipegon Bay, to connect with the proposed line west of the water-shed, would pass over a region as yet unexplored, and only known to be exceedingly mountainous and rough, and as it would run in a direction transverse to the valleys, more than one mountain range would have to be crossed and several considerable rivers bridged.

THE LAKE REGION.

Westward of the Height of Land, on the streams tributary to Rainy Lake, there is a section of country remarkable from the fact that a very considerable portion of its area is occupied by lakes. Those on the various routes which have been followed, are set down on the annexed map, but these give only a faint idea of their number. Every river and rivulet has its lakes. Go in whatever direction he will, the explorer, on passing over a mountain range, is sure to stumble on a lake. The Indians, with their little canoes, seem by means of these lakes to travel in almost any and every direction. So numerous are they, that it would be difficult to say whether the country would be better described as one vast lake with ridges of land running through it, or as land intersected by water. On ascending any of the bare rocky bluffs frequent in the country, mountains are seen stretching away in tumultuous and broken ridges to the horizon, with lakes gleaming from every valley which the eye can reach.

Such a region is but ill adapted for railways, but nature has made up for the deficiency, by providing such means for canals as exist in but few regions of so mountainous a character. Between

the hills and mountain ranges there are long reaches of tranquil water which could be connected together by means of lock and dam, with but little excavation. The country, however, in its present state, is not in a condition to admit of such projects as either railways or canals, but, even if it were, the very primitive and moderate way in which I propose to open the communication would still be necessary, as a preliminary step, to render the different points accessible.

A very marked characteristic of the region is that the streams are not subject to sudden or considerable floods, and this is a feature which the engineer, who has to provide for water-works of whatever description, will look upon with unmingled satisfaction.

This very favorable circumstance is due, primarily, to the lakes which serve as reservoirs, rising slowly during freshets, and subsiding gradually when they have passed. It is in part produced also by the character of the country, which is, in general, densely wooded.

The rain fall is excessive, and as a consequence the streams carry a very heavy volume, as compared to the area which they drain.

The lakes are everywhere studded with wooded islands, and so sheltered that the smallest canoes are rarely wind-bound.

The first considerable sheet of water westward of Height of Land, on the route which it is proposed to follow, is

LAC DES MILLE LACS.

To render this Lake accessible from Dog River, all that is required is a road of ten miles across the water-shed, between Jourdain's Rapid and the navigable water of the *Savane* River.

This line would pass over very easy ground, presenting no engineering difficulty whatever, except for about two miles near the *Savane* River, where the ground is low and swampy, requiring to be well ditched and fascined.

Two routes have been followed from Lac des Mille Lacs to Rainy Lake; one by its discharge, the River Seine, and the other by the old canoe route. A description of the former will be found in my printed report, pages 28 and 29. Subsequent to the publication of that report, the old canoe route, marked in yellow on the accompanying plan, was more thoroughly surveyed than it had been before.

Either route can be made practicable in the way I have recommended for the Seine, at a moderate outlay, but, after weighing duly their respective advantages, I am satisfied that the old canoe route will be, both as to economy of work in rendering it available, and facility of managing and navigating it afterwards, the best.

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THE CANOE ROUTE.

The canoe route, to describe it more particularly, leaves Lac des Mille Lacs at Baril Bay, by a portage of sixteen chains leading to Baril Lake, which is eight miles and a half in length.

This Lake is again left by the Brulé Portage (of twenty-one chains), leading to Windegoostegoon—a series of Lakes connected by a small stream, and having an aggregate length of twelve miles. The water is in some places shallow, but it can easily be rendered of sufficient depth.

Then comes the Great French Portage of one mile and sixty chains, the descent in that distance being $99\frac{71}{100}$ feet; succeeding which the Kaogassikok Lake presents an unbroken reach of fifteen miles, ending at the Pine Portage.

Then follow two portages in close succession—the Pine and the Deux Rivières—in length, respectively, twenty-six and thirty chains; but a road of two miles, to the navigable water leading to Sturgeon Lake, would pass them both, and a small pond between them.

Sturgeon Lake, with a pond above it, presents sixteen miles of navigable water, but the river below it, for eleven miles downwards to Island Portage, makes a descent of only $32\frac{50}{100}$ feet; a dam of sufficient height at Island Portage would, therefore, add eleven miles of navigable water to its length, making a reach of full twenty-seven miles.

Island Portage is about thirteen chains in length, with, in its present state, a fall of $10\frac{60}{100}$ feet. Immediately below it the Sturgeon River is somewhat shallow, but navigable, nevertheless, and at two miles from the Portage, Nequaquon Lake presents a magnificent expanse, navigable for fifteen miles, making, with the river at its inlet, a reach of seventeen miles.

From the Lake just named to the Nameukan Lake, there are three routes; the northern one, by Snake Falls, always followed at low water, is considered dangerous, as may be inferred from its name, the "*Maligne*."

The southern, or high water route, is easy of navigation for canoes, the total fall being overcome in three short portages. The third, at present only used with light canoes, avoids all the rapids by a portage of two miles into Nameukan, as shown on the plan, overcoming in that distance a descent of about seventy-two feet.

Then follows a traverse of ten miles, through Nameukan Lake, to the Bare Portage, which is but eleven chains in length, with a fall of $8\frac{55}{100}$ feet to Rainy Lake.

The following table shows the distances, with the fall, at each carrying place, in a more concise form:—

TABLE showing Portages and Navigable Reaches between Height of Land and Fort Frances.

PORTAGES.	Land Carriage		Difference Level, in feet.	Navigable Branches.	Miles Navigable.
	Miles.	Chains			
.....				Savane River and Lac des Mille Lacs Baril Portage	42
Baril Portage		16	+ 1.86	Baril Lake	8½
Brulé Portage		21	-47.02	Windegoostegoon Lakes..	12
Descent in Windegoostegoon lakelets and stream			-9.50	
French Portage	1	60	-99.71	Little French Lake and Kaogassikok Lake.....	15
Pine and Deux Rivières Portages	2		124.12	Sturgeon Lake and River	27
Island Portage and Fall, Sturgeon River		13	{ 10.06	} Nequaquon Lake.....	17
Portage between Nequaquon Lake and Nameukan Lake	2		{ 32.50		
Bare Portage.....		11	72.00	Nameukan Lake.....	10
Land Carriage.....	6	41	8.55	Rainy Lake and River...	46
Off +			403.46	Navigable.....	177½
			1.86	Land Carriage.....	6½
Diff. level between Lac des Mille Lacs and Rainy Lake			401.60	184

Thus, between the head of the *Savane* River and Fort Frances, the extent of navigable water would be one hundred and seventy-seven and a-half miles, in eight reaches, divided by seven portages, the latter having an aggregate length of six miles and forty-one chains; in round numbers, six miles and a half. At a very little outlay, however, over what I am about to propose, the navigable reaches could be somewhat extended, and the number of carrying-places reduced to five.

For example, the difference in level between Lac des Mille Lacs and Baril Lake is hardly two feet, the latter being so much the highest. If, therefore, Lac des Mille Lacs were raised by means of a dam to the level of Baril Lake, and a cut made between the two, eight miles and a half would be added to the navigable reach of Mille Lacs, and one portage done away with.

In like manner, the difference in level between Nameukan and Rainy Lakes is but $2\frac{55}{100}$ feet, which might be overcome by a wooden lock, thus adding some ten miles to the navigable water of Rainy Lake, and avoiding another trans-shipment. There would then remain only five portages, in a distance of one hundred and eighty-four miles—one hundred and seventy-seven and a half miles being by water and a little over six by land. On three of the portages, averaging about two miles each, horses or oxen would have to be maintained, while, on the remaining two, namely: Brulé and Island

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Portages, being respectively but twenty-one and thirteen chains in length, wooden-ways might be so constructed as to admit of hand-cars being drawn over them with facility. I point this out, but would not recommend, for the present, either a cut at Baril Lake or a lock to connect Nameukan and Rainy Lake.

The following are the works which I consider of the most pressing and immediate importance in this division :

DAM AT LITTLE FALLS, RIVIERE LA SEINE.

A dam at this point, if of sufficient height, say forty-two feet, would have the effect of raising the water of Lac des Mille Lacs to a level equal with, or a little higher than Baril Lake, the latter being $1\frac{86}{100}$ feet above the level of Mille Lacs; so that, by a mere cut, the two could be connected, and, in the event of more extensive works being undertaken at some future period, it would be no small matter to have the water of Mille Lacs at command, for, until after passing French Portage, the supply of water on the canoe route, although ample for the works now proposed, is not sufficient for the more extensive improvements which will doubtless be required in the future.

Among the further advantages of this dam would be the additional depth which it would give over an extensive shoal just at the mouth of the *Savane* River.

Moreover, in the event of a land road all the way between Lac des Mille Lacs and Rainy Lake becoming necessary, a dam at the Little Falls would extend the navigable waters of Mille Lacs to a distance of seventy miles on Rainy Lake. The construction of such a road has been strongly urged by various parties who have manifested a deep interest in opening the communication, chiefly under the idea that it would greatly expedite the conveyance of mails.

It must be borne in mind, however, that taking into account the character of the country, seventy miles of road made in such a way as to be really useful, in a region so remote, would cost not less than one hundred and twenty thousand dollars. It is therefore a matter for consideration whether for the present the less expensive way would not be the best, and whether if such a sum, instead of being applied to making a road, were expended on the construction of locks to extend the navigable reaches, it would not have a better effect, even as regards the transport of mails, inasmuch as steamers might then be placed to advantage on reaches now too short to admit of their being used.

The situation at the Little Falls is admirably adapted for a dam, the river at that point passing through a cut in the rock with high rocky banks on either side. To have the desired effect of raising

of Land

	Miles Navigable.
Lac des Mille Lacs	42
Portage	8 $\frac{1}{2}$
Lakes	12
.....
.....	15
.....	27
.....	17
.....	10
.....	46
.....	177 $\frac{1}{2}$
.....	6 $\frac{1}{2}$
.....	184

Frances, seventy-portages, forty-one or two, a very little navigable carrying-

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the water of Lac des Mille Lacs to the extent of about three feet above its present level, the dam would require to be forty-two feet in height. From a rough estimate by me when on the ground, I have set down its cost at twenty thousand dollars. If, however, the mere raising of Lac des Mille Lacs were the only object in view, it could be attained by a much less costly structure at its immediate outlet.

Taking the works proposed in their regular order from the Lac des Mille Lacs to Rainy Lake, the improvement next required would be at

BARIL PORTAGE.

This is the portage or carrying place, between Lac des Mille Lacs and Baril Lake, in length sixteen chains. For the present it is merely proposed to improve the portage and place a tramway upon it for hand-cars. Baril Lake is, as stated, $1\frac{86}{100}$ feet above the level of Mille Lacs, and when the latter is raised by means of the dam proposed, a cut might easily be made to connect the two lakes and do away with the portage, as already said.

BRULE PORTAGE.

Here, also, it is proposed to place a tramway. The present length of the portage is twenty-one chains, but the brook forming the discharge of Baril Lake can be so improved as to reduce the distance to ten chains. The difference of level between the water of Baril Lake and the lower end of the portage is $47\frac{2}{100}$ feet.

DAM AT HEAD OF FRENCH PORTAGE.

The effect of this dam would be to raise the water of the Windegoostegoon Lakes, which is in some places shallow, and do away with a little rapid where there is a fall of three feet. The channel, where the dam is to be built, is of solid rock, eighty feet in width, with rocky banks on each side. The structure would be an ordinary flat dam, built of unhewn timber, and covered in front with timbers hewn to six inches, raised to the height of twelve feet, with a flood-gate fifteen feet in width, provided with stop logs and the means of raising them, in the same manner as at the head gates of a slide. A work of this extent would cost in ordinary circumstances about twelve hundred dollars, but considering the remoteness of the situation and the cost of getting men, supplies, etc., I have set it down at sixteen hundred dollars.

FRENCH PORTAGE.

This carrying place is one mile and sixty chains in length, and the fall from its eastern end to the Little Lake at its western extre-

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mity $90\frac{71}{100}$ feet, a difference of level which forbids any attempt to encounter the river for the present. There is nothing for it, therefore, but a road, and for this the ground, although somewhat hilly, is not unfavorable. French Portage is succeeded by a navigable reach of fifteen miles, embracing Kaogassikok Lake and ending at Pine Portage.

PINE PORTAGE AND DEUX RIVIERES PORTAGES.

These two portages may be considered as one, and have to be passed by a land road of two miles, as at French Portage, as the river could only be rendered available at an outlay which must form a subject for consideration in the future, the fall being $124\frac{12}{100}$ feet. At present, a land road, of the required distance (two miles) can be made over ground somewhat rough, but on the whole favorable. This road would end at the navigable water leading to Sturgeon Lake, and the next work required would be the

DAM AT ISLAND PORTAGE.

This is one of the most important works on the whole line of route, as its construction would give an unbroken reach of twenty-seven miles of navigable water, through the very roughest section of the Lake Region. Sturgeon Lake, which would form a link in this stretch, is sixteen miles in length, navigable throughout. From its discharge to Island Portage, the distance is eleven miles, and the aggregate fall $32\frac{5}{100}$ %. The carrying place is on an island just at the brow of a fall of ten feet. Sturgeon River is, at this point, three hundred and thirty feet wide, with a bottom of solid rock, and rocky banks on either side rising with a moderate ascent. Here it is proposed to construct a flat dam of the simplest form, but at the same time the strongest; and, in this instance, I see no object in going to the expense of making flood gates. The height of the dam would be not less than thirty-five feet. The quantity of timber used in its construction will reach eighty thousand lineal feet, and timber of the finest description, both red and white pine, is available; but, considering the remoteness of the locality, its cost, built into the work, cannot be reckoned at less than seven-teen cents per foot, equal to fourteen thousand four hundred dollars, add to which for filling, &c., three thousand six hundred dollars, making eighteen thousand dollars, as set down in the estimate.

DAMS AT NEQUAQUON.

Immediately below Island Portage, Sturgeon River is shallow, but deepens gradually, till, at a distance of some two miles, it

opens out in Nequaquon Lake. The main, or northern outlet of this lake, is over a rocky bottom, and across this I propose to run a low flat dam, so as to give a sufficiency of water below Island Portage, at the shoals just mentioned. The southern outlet is smaller, but would also require a dam, and for these works I have included in the estimate a sum of four thousand dollars.

PORTAGE BETWEEN NEQUAQUON AND NAMEUKAN.

This Portage leads from the smooth water, at the western end of Nequaquon Lake, to a bay of the Nameukan Lake—its length is two miles, and the descent from one lake to the other about seventy-two feet. The ground is rough and difficult, but in the estimate I have included it with other portages, and taken a general average for the whole. From this Portage a reach of ten miles of navigable water ends at

BARE PORTAGE.

This is the last carrying place to Rainy Lake. The descent is $8\frac{5}{100}$ feet, and the length of the portage—eleven chains—can be much reduced by a little excavation.

LAKE OF THE WOODS DIVISION.

This comprises the navigable reach extending from Fort Frances to the north-west angle of the Lake of the Woods, a distance of one hundred and twenty miles.

At Fort Frances, there is a complete and sudden change in the appearance of the country, and an evident improvement in the climate. The ever-recurring rocks and hills of the lake region disappear, and in contrast to these are commodious buildings, a farm of some extent, and cattle grazing in the fields, with a broad river sweeping westward between banks of deep alluvial soil.

Rainy River is, here, a stream of great volume, nearly a quarter of a mile in width. The falls ($22\frac{88}{100}$ feet in height) are just opposite the Fort, and from this point to the north-west angle of the Lake of the Woods (a distance of one hundred and twenty miles, as stated), the navigation is uninterrupted.

There are, however, two little rapids on Rainy River, the Manitou and the Long Rapids, occurring about half way to the Lake of the Woods, as set down on the accompanying map. The first, with a fall of $2\frac{5}{100}$ feet, has great depth of water, and could easily be stemmed by a steamer of moderate power. The Long

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Rapid may have a fall of $3\frac{1}{2}$ to 4 feet, distributed over a distance of some thirty chains. In this rapid the water glides smoothly, but is in some places shallow. I think, however, that even at the lowest stage of water, a vessel drawing four feet could pass. In any case, the bottom is of a nature to be easily deepened, if required. The strength of the current presents no serious obstacle, as canoes can be paddled up, requiring the use of the setting poles at only two points. At the Manitou the tow line has generally to be used.

Any impediment in these rapids, therefore, would be so easily overcome, that it is hardly worth estimating, and to all practical purposes, the navigation in this long reach may be regarded as uninterrupted.

In my preliminary report, as already said, before the later explorations were made, in the country westward of the Lake of the Woods, Lac Plat was suggested as the starting point of a road to Fort Garry, chiefly because it was supposed to be the point which would involve the making of the smallest extent of road. The western extremity of Lac Plat is, however, one hundred and fifty eight miles from Fort Frances, while the north-west angle, which is now adopted as the starting point, is but one hundred and twenty miles; a saving of thirty-eight miles is thus effected in navigating the Lake of the Woods.

Before concluding this part of the subject, I would draw attention to the fact that two locks at Fort Frances, where the fall is $22\frac{88}{1000}$ feet, would have the effect of adding Rainy Lake to the navigable reach which I have just been describing, giving one hundred and sixty-six miles without a trans-shipment.

FORT GARRY SECTION.

As already explained, a good deal of difficulty was experienced in finding a line practicable for a road, by which to get through the marshy region intervening between the Lake of the Woods and the prairie eastward of the Red River Settlement.

This section of country presents to the eye, in its general character, the appearance of an undeviating flat. From the Lake of the Woods, for a distance of twenty-five or thirty miles westward, swamps of great extent, covered with moss and stunted evergreens, are of frequent occurrence. In other sections, considerable areas are occupied by marshes or shallow lakes, with bulrushes and other aquatic plants standing out of the water. In the latter cases, the bottom, after a certain depth is attained, is generally firm, while, in the swamps, in some instances, the surface covering is

itself afloat, and heaves and undulates beneath the feet, presenting a quagmire or peat bog, on an extensive scale. This description applies more particularly to the section nearest to the Lake of the Woods. On approaching the prairie, the swamps are less extensive and the ground in general more favorable. In the swampy sections, however, there are some areas of dry ground and good soil, and, where the bogs are deepest, they are intersected by low gravelly ridges which rise but a few feet over the general level. These ridges are firm, and their direction can be traced by the heavy growth of wood which they carry. Flat and level as the country appears to be, it is susceptible of being drained. The section most swampy, although but slightly higher than the Lake of the Woods, is at an elevation of over three hundred feet above the valley of Red River, and wherever a run of water is met with, except in the lake-like swamps, it is seen gliding on with a speed which indicates a sufficient fall for drainage.

The principal streams in the region are the Broken Head River, the White Mouth River, and the Roseau or River of Roses.

The latter takes its rise in the United States Territory, and runs westward, at a short distance from, and nearly parallel to, the Boundary Line, till it joins the Red River, a little to the north of Pembina. This stream forms a link in the ancient war-path of the Saulteaux Indians to the country of their enemies—the Sioux. The Broken Head runs north to Lake Winnipeg, while the White Mouth falls into the Winnipeg River, just above the Seven Portages. The section which I have just been describing, except in the swamps and marshes, is densely wooded. Westward of this is the Prairie, having a depth of thirty miles to the eastward of Red River. This Prairie does not meet the wooded region as might be supposed, gradually merging from prairie to woodland, but abruptly and at once. It seems to be an ancient lake bottom, still nearly as level as a lake, and generally without wood. Bordering on this is the wooded region, with points stretching into the plain, like the headlands of a lake. Just where the prairie and woodland meet, there are, in some places, banks of gravel which will eventually become of importance, as material for forming roadways over the soft and yielding soil of the plains.

From Fort Garry to the north-west angle of the Lake of the Woods, a road line has been laid out, and its practicability proved by the fact that, for several years, it was used as a post road and the mails carried over it on horseback. Wheeled vehicles, except in very wet weather, can already travel over the Prairie, and, taking the line altogether, its average cost, to form a first class country road, will be rather under than over the general average of such works

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To describe it more particularly, starting from the north-west angle of the Lake of the Woods, the ground, for a distance of fifteen miles, is low and swampy, requiring deep and extensive cuts for draining, added to which the roadway, for several miles, will require to be fascined—no large bridges on this section.

Proceeding westward, there is a marked improvement in the next ten miles, but the ground is still very swampy. Material for fascining and bridging abounds, and two small bridges have to be made, on tributaries of the White Mouth River. Taking the above as one section of twenty-five miles, reckoning from the Lake of the Woods, I set its average cost at sixteen hundred dollars per mile, equal to forty thousand dollars; still proceeding westward for thirty-five miles (which may be regarded as one section) the ground is much improved in character. For some four or five miles, near the White Mouth River, nothing better could be desired. Then follows a series of low gravelly ridges, over many portions of which little more has to be done than to grub out the trees. An occasional intrusion from an adjoining swamp has to be fascined, and bridges will be required over the Broken Head and White Mouth Rivers. For this section, I have set down one thousand dollars per mile; in all thirty-five thousand dollars.

The next section is over low prairie embracing a distance of about thirty miles, from a place where there are a few Indian huts, called "Oak Point Settlement," to Fort Garry. For this section I have set down four hundred dollars per mile, which may appear to be a low estimate for a road, but all that can be done for it, without going to a very great outlay, is to drain it thoroughly, and, if this were done, it would be as good as the roads at Red River generally are. A road on a prairie has this advantage, that when the turf cuts and the wheels begin to sink in one track, another is always available, the width being quite unlimited.

To render the section under consideration practicable in this way, one deep ditch is necessary, with a little fascining and raising of the roadway in the lower parts. Lateral cuts, of considerable length, will have to be made to drain the water from the main trench; all which can be accomplished at an average cost of four hundred dollars per mile, making in all, twelve thousand dollars for the Prairie Section.

TOTAL LENGTH OF ROUTE BY LAND AND WATER.

	Land Miles.	Chains.	Water Miles.
Dog Lake Road.....	25		
Dog Lake and River.....			35
Height of Land Portage	10		
Lac des Mille Lacs and <i>Savane Riv'r</i>			42
Baril Portage.....		16	
Baril Lake.....			8½
Brulé Portage		21	
Windegoostegoon			12
French Portage.....	2		
Kaogassikok			15
Deux Rivières	2		
Sturgeou Lake			27
Island Portage		13	
Nequaquon			17
Nequaquon Portage	2		
Nameukan Lake			10
Bare Portage.....		11	
Rainy Lake			46
Fort Frances.....		10	
Rainy River and Lake of the Woods			120
Fort Garry.....	90		
	<hr/>	<hr/>	<hr/>
	131	71	332½
			131
			<hr/>
			463½
			<hr/>

ESTIMATE.

The probable cost of opening the communication, in the way I have proposed, from Jourdain's Rapid, at the head of the navigable water on Dog River, to Fort Garry, would be as follows:—

LAKE REGION.

Roads and improvements at Height of Land, between Dog River and Lac des Mille Lacs	\$11,000 00
Dam, with flood-gates, at eastern end Great French Portage	1,600 00
Dam, thirty-five feet high, across Sturgeon River, at Island Portage.....	18,000 00
Two low flat dams, at Nequaquon Lake ...	4,000 00

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Water Miles.	Dam, at Little Falls (Two Falls Portage on the River Seine).....	20,000 00
35	Six and a half miles road and tramway over portages, between Lac des Mille Lacs and Rainy Lake.....	10,400 00
42		<u>65,000 00</u>

LAND ROADS (FORT GARRY SECTION.)

12	Ninety miles land road, between north-west angle of the Lake of the Woods and Fort Garry, would cost for twenty-five miles, Eastern Section, at \$1,600 per mile.....	\$40,000 00
15	Thirty-five miles, Middle Section, at \$1,000 per mile.....	35,000 00
27	Thirty miles, Western Section, over low prairie, at \$400 per mile	12,000 00
17		<u>87,000 00</u>
10		<u>\$152,000 00</u>
46		
120		

OTHER WORKS (LAKE SUPERIOR SECTION.)

332½	A pier required at the Dépôt, Thunder Bay, Lake Superior.....	2,500 00
131	Seven miles land road, to connect Fort William with Dog Lake Line.....	7,000 00
463½		<u>9,500 00</u>
		<u>\$161,500 00</u>
	Superintendence and contingencies.....	5,000 00
		<u>\$166,500 00</u>

The above does not include such of the works, in the Lake Superior section, as were provided for in the grant of fifty-five thousand nine hundred dollars made last year, except a road at the Height of Land, which is allowed for in the present estimate. This was necessary, inasmuch as the total grant of last year will be required to complete the road to Dog Lake, and finish the dam, which latter was found to involve a little more work than anticipated, on account of the necessity which has arisen of running an additional dam along a rocky ridge of low ground, south of the outlet of Dog Lake.

PROBABLE TRAFFIC.

Within the last few years, since the North-west Territories have begun to attract so much attention, many schemes have been advanced and many suggestions made, as to the best means of opening the communication. Without going, for the present, into the merits of these schemes, I would draw attention to the fact that the country between Lake Superior and the Red River Settlement is a wilderness, as yet in a state of nature; that, except to the canoe of the Indian, or the voyager, it is quite inaccessible in its present state, and that until some way of getting through it is devised, there can be no means of taking even the initiatory steps in the construction of works of great magnitude, such as railways or canals. A line of communication such as I have proposed would render the country accessible, and, when it is completed, it will be time enough to entertain greater projects.

But, while taking this view of its utility, I must also draw attention to the fact that the opening of the communication, even in this simple way, would have the immediate effect of drawing the trade of the North-west Territories to Canada.

The people of Red River, at present, purchase their goods in St. Paul, and take them from thence full six hundred miles, *overland*, to the settlement; sometimes, indeed, there is a small steamer which runs on Red River during high water, but, as a general rule, the goods which the settlers require are carted all the way through, and the cost of freight is generally reckoned at from four and a half to five dollars per 100 lbs.

Now, from an estimate which I have made, I feel confident that if the communication were opened, even in the primitive way suggested, the cost of transport from Lake Superior to the Red River Settlement would not exceed \$1.75 per 100 lbs.; but, supposing that it should cost as much as two dollars, it would still be less, by over one-half, than the cost of freight from St. Paul; and when the vastly cheaper rate at which goods can be purchased in Canada, as compared to Minnesota, is considered, it is but reasonable to suppose that the trade must come this way.

I have only alluded, so far, to the trade of the settlement, or rather of the settlers, apart from that of the Hudson's Bay Company, but I think the latter might be looked for also; for the able officers who manage that ancient and honorable corporation, as soon as they saw that they could get their supplies cheaper by Lake Superior than by Hudson's Bay or St. Paul, would at once adopt the route. It is clear, therefore, that by opening the communication in the manner proposed, a trade, amounting to several millions of dollars annually, would be at once transferred to Canada. Even as a matter of speculation, without reference to political consider-

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ations or the vast field which would be opened to colonization, it would be a safe enterprise to open the line.

It is a circumstance of no small importance, in recommending the expenditure of money on a public work, to be able to show that, when completed, it will at once begin to yield a return. In the present instance, the return would not, of course, be in the shape of tolls on the works, but in the way of increasing trade, and consequently increasing revenue, the laying open of extensive tracts of fertile territory for settlement, and the development of a district now known to be rich in mineral resources.

The State of Minnesota has, of late, being doing a good deal to facilitate intercourse and trade with the Red River Settlement. During the summer now approaching, a tri-weekly line of stages will be established, mails will be delivered every second day, and the people, cut off from Canada, will naturally draw closer to the only neighbors with whom they can hold intercourse, and, if this state of things continues long, they must become a community of the United States, rather than a British Colony.

Now, it is evident, that if the trade of the North-west Territories is of value to Minnesota, it ought to be of some importance to Canada; and, if the people of a new State see advantage in taxing their scanty resources, to make roads and keep up lines of stages to attract that trade, *overland*, surely the Dominion, with much greater facilities and more ample resources, might do a little to obtain it, when nearly two-thirds of the distance would be by navigable water.

THE MEANS OF TRANSPORT.

When the traffic of the Red River Settlement and the North-west Territories has once fairly begun to take the route by Lake Superior, private enterprise will soon fall upon the means by which transport can be most easily effected.

LAND CARRIAGE.

In the meantime, I may suggest the mode, which, in the first instance, must be resorted to. At Lake Superior, of course, when the communication is once completely opened, there will, no doubt, be ample competition for the conveyance of articles over the road to Dog Lake, as there probably will be at the Height of Land Portage also.

At three of the portages in the interior, however, namely, the French, Deux Rivières and Nequaquon Portages, averaging two miles each, horses and oxen will have to be maintained for a time. At the Baril, Brulé, Island and Bare Portages, tramways will be arranged for hand cars, the latter being short.

Between the North-west angle of the Lake of the Woods and Fort Garry, no provision would have to be made, as the means of conveyance are abundant at the Red River Settlement.

WATER CARRIAGE.

On the shorter reaches, boats, such as the Hudson's Bay Company use in the transport of goods from York Factory to the Red River Settlement, would be the best. They carry about five tons, and are easily drawn over a portage. Such boats would answer well between Lac des Mille Lacs and Fort Frances. Once the communication was fairly established, a relay of boats might be kept on each reach, and then much larger vessels might be employed.

In the longer reaches, steamers might be used to advantage, and would probably—most certainly, if the traffic became extensive—be more economical than boats.

There would be in all five reaches in which I think it would be desirable to have small steamers, namely :—

On Dog Lake and River.....	35 miles navigable,
<i>Savane</i> River and Lac des Mille Lacs...	42 "
Sturgeon Lake and River.....	27 "
Rainy Lake.....	46 "
Fort Francis to North-west Angle.....	120 "

270 miles.

Thus, in five reaches, amounting in the aggregate to two hundred and seventy miles, the shortest of which would be twenty-seven miles in length, small steamers, of a cheap class, might be used to advantage. Gradually, as improvement advanced, the reaches might be connected together by means of locks, and then, of course, larger vessels would come into play.

In the five shorter navigable reaches of the "Lake Region," boats such as I have suggested, or indeed scows or boats of any kind, might be used, as for instance, in

Baril Lake	8½ miles.
Windegoostegoon	12 "
Kaogassikok	15 "
Nequaquon Lake.....	17 "
Nameukan	10 "

62½ miles.

Five reaches, giving sixty-two miles and a half for ordinary row boats and scows.

COST OF FREIGHT.

With these arrangements on the carrying places and navigable reaches, the cost of freight would be nearly as follows :—

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25 miles land carriage, to Dog Lake.....	25 cents.
35 miles water carriage, through Dog River and Lake	8 "
10 miles land carriage, Height of Land	12 "
184 miles, to Fort Frances, land and water	60 "
120 miles, Fort Frances to Lake of Woods, in steamers or barges carrying say fifty to one hundred tons.....	8 "
90 miles, North-west Angle to Fort Garry, by land	80 "
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464 miles.	\$1 93

or say even two dollars per 100 lbs.

This would be less than half the cost of freight from St. Paul, which is \$4 50 per 100 lbs. and sometimes five dollars.

I have set down the cost of transport purposely high, although in some places it may appear low; for example, between the North-west Angle and Fort Garry, I have put down eighty cents per one hundred pounds, as the cost, in a distance of ninety miles. In estimating the accuracy of this, it must, in the first place, be considered that horses and carts are abundant at Red River. Horses are very numerous, and there is but little employment for them, and the people make their own carts and harness, which, although very serviceable, are very cheap; they besides bring articles six hundred miles from St. Paul for \$4.50 per 100 pounds, which would be but equal to sixty-seven and a half cents on ninety miles, and I have set down eighty cents, a fair allowance in any country. Even in Lower Canada, on the St. Maurice, where there is a good deal of competition in winter, loads can be sent one hundred and twenty miles into the interior for from seventy-five to eighty cents per 100 pounds; and between Three Rivers and Montreal, a distance of just ninety miles, sixty cents per 100 pounds, would be considered, at Three Rivers, a high rate.

In the long navigable reach of one hundred and twenty miles, between the North-west Angle and Fort Frances, I have put eight cents per 100 pounds, equal to \$1.60 per ton of 2000 pounds; one dollar per ton would be ample, as large vessels can be used.

In the reach of broken navigation, of one hundred and eighty-four miles, between the *Savane* or Height of Land Portage and Fort Frances, I have put sixty cents per 100 pounds, equal to twelve dollars per ton of 2,000 pounds. Now five men with a boat carrying five tons, can go in five days from the *Savane* to Fort Frances, and return in four days, taking the same boat with them all the way. Allowing one dollar per day for each man, their expenses would be, for nine days, forty-five dollars, whereas I have allowed sixty dollars; but, if there were a relay of boats and scows capable

of carrying fifty tons, on each reach, with horses and waggons on the three longer portages, it could be done for six dollars per ton, or say thirty cents per 100 pounds.

For the Height of Land carriage of ten miles, I have set down twelve cents per 100 pounds, or say \$2.40 per ton of 2,000 pounds. It requires no explanation to show that this is a very ample estimate.

In the Dog Lake and River reach of thirty-five miles, I have put down eight cents, equal to \$1.60 per ton, and for the land carriage of twenty-five miles, from Thunder Bay to Dog Lake, I estimate twenty-five cents per 100 lbs., or say five dollars per ton of 2,000 pounds.

These estimates will all be considered ample; but, supposing the communication to be well opened, and the appliances for transport in full operation, the following would be a fair estimate:—

25 miles land road, Thunder Bay to Dog Lake.....	25 cents.
35 miles water carriage, Dog River and Lake.....	6 “
10 miles land carriage, Height of Land	10 “
184 miles, Fort Frances, 6¼ being by land.....	30 “
120 miles, Fort Frances to north-west angle in Bat- teaux, of 100 tons	6 “
90 miles land carriage, North-west Angle to Fort Garry	75 “
464 miles.	\$1.52 per 100 lbs.

That is, \$30, ⁴⁰/₁₀₀ per ton of 2,000 lbs., from Thunder Bay to Fort Garry. But, as I said before, making every allowance, and taking the cost at \$2 per 100 lbs., equal to forty dollars per ton, at the outset. From York Factory to Red River, the contract price used to be twenty pounds sterling, or one hundred dollars per ton, while the present rate, by the Prairies and Red River, is ninety dollars per ton of 2,000 lbs.

Beyond this, it surely requires no argument to show that, if the communication were opened, the whole trade of the Red River settlement, both that of the Hudson's Bay Company and the settlers, would pass by Lake Superior. A saving of fifty dollars per ton on freight would certainly decide the matter. But this is not all, the price of such articles as the people of the Red River require, being chiefly dry goods and groceries, is much lower in Canada than in any of the remote western Towns of Minnesota. If Fort William were again made a free port, as it recently was, and always supposing the communication to be opened, the people of the Red River Settlement would be in position to supply the northern settlements of Minnesota with merchandize, instead of being dependent upon them, as at present.

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RESOURCES—TIMBER, &c.

When the communication is opened, and settlement begins to advance in the prairies of the West, there will be a demand for wood for building and other purposes, increasing gradually until it has attained proportions commensurate with the means of transport. Westward of the Height of Land, on the streams flowing towards Rainy Lake, there is an abundance of timber, such as red and white pine, of a large size and good quality. This section would compare not unfavorably with some of the best lumber regions on the Upper Ottawa.

The prairies are nearly destitute of timber, and here is a supply which, to all practical purposes, may be said to be illimitable, and, looking to the future of the western territories, and having regard to the probable traffic which is to support a line of communication, there are, in the forests of the Winnipeg slope, the elements of a trade which should be kept in view.

Another article of economic value, which should be taken into account, is the vast quantity of peat which might be obtained in the swampy region near the Lake of the Woods; some of the swamps are very deep, and hold in store great quantities of fuel of this description, for a region further to the west where there is but little wood. In a very short time the people of Red River Settlement will find peat cheaper than wood, although, doubtless, they have for the present a considerable supply of the latter article.

The country has, however, other valuable resources, of which but little is as yet known, and no doubt, in the future, attention will be directed to its

MINERAL RESOURCES.

It is now well known that silver mines of surpassing richness were discovered at Lake Superior last summer, but it is not so generally understood that a formation, of the same age as that in which they occur, extends with more or less interruption to the Lake of the Woods, and that, for a great part of the way, the line which it is proposed to open will pass over Schists of the Lower Silurian period, such as yield silver at Lake Superior, and gold in Nova Scotia.

That part of line, however, extending from a little eastward of Dog Lake to the Nameukan Lake, will be almost wholly in Laurentian gneiss—Silurian rocks then show themselves, and the Schists on Rainy Lake are plentifully intersected with lodges of quartz. While at Fort William, last summer, I was shown some very fine specimens of Gold quartz taken from Rainy Lake. I

was also informed, on what I believed to be good authority, that alluvial Gold had been discovered, but that the fact was being kept as secret as possible. These reports gain confirmation from the fact, that on Vermillion Lake, in Minnesota, which is tributary to Rainy Lake, and only at a short distance from it, Gold quartz has been already worked and various claims taken up. The communication which it is proposed to open might, therefore, be the means of developing an American as well as a Canadian Gold Field.*

At the Lake of the Woods, chloritic and talcose schists, of Silurian age, similar to those of the Gold districts of the Chaudiere, are frequent on the Islands, and they are traversed by what appear to be very promising quartz lodes.

Upon the whole, the indications and actual discoveries throughout the region are such as to warrant the expectation that there are mineral resources, as yet undeveloped, which will eventually lead to a trade which will greatly aid in sustaining a line of communication.

OTHER METHODS OF OPENING THE COMMUNICATION.

RAILWAYS.

It has been urged that a Railroad from Lake Superior to Red River would afford the best and easiest means of communication, and that it would form a link in the great Railway system which it is believed will, at no distant day, span the continent from the Atlantic to the Pacific, within British Territory.

Now, while admitting the great advantages which would result from a work of this kind, it must be borne in mind that the means for its construction cannot at present be obtained. There is no amount of argument, as to prospective advantages, which could procure the investment of twenty millions of dollars, which

* The following extract shows that the mines in the Vermillion district, near Rainy Lake, are beginning to attract attention:—

“THE LAKE SUPERIOR COUNTRY.—The *Gazette* (Superior, Wis.) says:—‘Col. Henry Tyndall arrived here from the Vermillion district late last evening, and started for St. Paul this morning. Tests have been made from several of the veins, all with the most favorable results. The quantity of rock tested in each case was not less than five hundred pounds. In every experiment so far, the yield has been largely over \$100 per ton; and some of them have gone up to thousands. A private letter informs us of one instance where one hundred and fifty pounds of rock yielded a pound and one-half of bullion. Colonel Tyndall pronounces the country rich, and in this statement he is borne out by the amount of bullion which he brings with him, amounting to between seven and eight pounds of gold and silver.’”

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would be about its cost, in an undeveloped region, such as that through which it would pass. Theoretically, the idea may be a good one, but practically, it is at least premature.

Moreover, a railroad between the points indicated would be isolated as regards other railways, and being available only during the season of navigation, would be without one of the chief advantages of a railroad, which is that it can be kept in operation, independently of the navigation.

It has been suggested that, whatever objections might attach to the project of a railway all the way to Red River, a comparative short line would best overcome the rough and difficult section intervening between Lake Superior and Rainy Lake. But the same objections which present themselves in regard to the former, apply to the latter.

Its length, that is of a line from Lake Superior to Rainy Lake, allowing for deviations, would not be greatly less than two hundred miles, and its cost would far exceed any means which there is a probability of obtaining.

It would absorb an amount of capital more than sufficient to provide for the lockage required to connect the navigable reaches between Dog Lake and Lake Winnipeg, and form a canal, which, in the present state of the country, or any stage of development to which it can attain for a considerable period, would be of greater utility than a railroad.

Finally, before such a work was undertaken, the country would have to be rendered accessible, as I have already said, by some such means of communication as I have suggested.

It will not be understood, however, from what I have said, that a railway is impracticable. In fact, with exception of the section between Lake Superior and Rainy Lake, which is rough and broken and has never yet been explored with a view to a work of the kind, the ground is not unfavorable, but, as I have said, the idea of such a work is premature.

CANALS.

On reference to what I have already stated, it will be seen that, from Dog Lake north-westward, to the Lake of the Woods, long navigable reaches occur in continuous succession, separated by short intervals of rapid water or other impediments. From the Height of Land Portage, where it strikes the *Savanx* River, to the North-west Angle of the Lake of the Woods, the distance is three hundred and four miles, and the total amount of lockage that would be required, four hundred and twenty-five feet, being somewhat less than that of the Rideau Canal. By means of lock and

dam, the whole of this distance might be rendered navigable without a break, at comparatively small cost, if wooden locks were adopted. The river channels between the navigable sections, are every where of rock, and generally favorable for the construction of such works as would be required.

With this extent of navigation might be connected the navigable water, east of the Height of land, having a length, in Dog Lake and River, of thirty-five miles.

When the dam now in progress at Dog Lake is completed, the difference in level between the waters of Dog River and the *Savane* will be about a hundred feet, and a Canal with locks, by way of Muskaig Lake, might be constructed to connect the two. Lac des Mille Laes would be the summit level, and it has sufficient water for a Canal both ways.

This would give three hundred and fifty miles of unbroken navigation, approaching at its eastern extremity to within twenty-five miles of Lake Superior, and at its western to within ninety miles of Fort Garry.

All the lockage required would cost less than would a railroad of two hundred miles to Rainy Lake, and it would be of vastly greater utility.

A short Railway of twenty-five miles, from Dog Lake to Thunder Bay, would connect the navigation with Lake Superior; while a similar work of ninety miles, from Fort Garry to the North-west Angle of the Lake of the Woods, would join it to the Red River Settlement. The latter Railway would be over very even ground.

I have offered these suggestions, not with a view of conveying the impression that they should be immediately acted upon, but to show what is practicable, and what would be the true way of opening a line adapted for heavy traffic, when the country has attained a stage of development to warrant the expenditure which it would involve.

SYSTEM OF WORK BY CONTRACT OR OTHERWISE.

The work is of that nature, which from long experience in carrying on similar operations, in remote sections, I believe could be better performed by engaging good workmen and competent overseers than by contract.

Contract work is all well enough in a settled country, where, if one man fails in accomplishing an undertaking, others are always ready to take it up; but, in such a region as that in which the

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works under consideration would be carried on, the Government would be, in a measure, at the mercy of the contractor; as for instance, if he should not make provision for a particular work, or from any cause break off, it would throw the enterprise back for a full year. Contractors, as a general rule, would only undertake work in a region so remote in the hope of large profits, which the comparatively small sums set down for each particular section would not bear. They would, as usual, have endless bills for extras, where every little contingency could not be foreseen; and if it appeared to be a losing business, would delay and petition for increase in their rates, and might, indeed, abandon the works altogether. Moreover, the Indians, in some of the sections, have to be very carefully dealt with. At such a distance from the restraints of law, none but men of good character should be brought among them, and spirituous liquors should be strictly prohibited.

Under a system of contract, the Government would have little to say as to the class of men to be employed, and the officers in charge of the works might be unable to prevent liquor from being smuggled in. The Indians sometimes assemble at Fort Frances, and on Rainy River, to the number of five or six hundred, and if a few barrels of whiskey were rolled amongst them the consequences might, undoubtedly, be serious.

Moreover, contractors, or their employés, would not consider themselves in any way bound to refrain from interfering in the fur trade, and their doing so would irritate and render hostile the employés of the Hudson's Bay Company, who had been so friendly and obliging in the past, and whose good offices will, I have no doubt, be equally at the disposal of the country in the future, if they meet with the courtesy they are always ready to extend.

In my allusions to the contract system, I wish it to be clearly understood that I speak from my own experience of such a system in the wilderness; and, meaning no reflection on contractors in general, I would say that if such a system is adopted in the Rainy Lake Section of the country, a military force will be required to support it, and this would soon occasion a greater outlay than the full amount of my estimate for the work.

For the works on the Lake Superior Section, and the Lake Region, the head-quarters, from whence supplies are to be sent in, must be at Fort William or Thunder Bay; the latter, of course, after the Dog Lake road is completed.

For the road between the North-west Angle of the Lake of the Woods and Fort Garry, supplies and men must be obtained at the Red River Settlement. Workmen in sufficient numbers can be had there, and, from letters I have recently received, I am led to believe that provisions also will be abundant, such as flour, beef, etc.

THE INDIAN ELEMENT.

In opening the communication to Red River, the country will be brought, to some extent, into contact with the Indians, who have their hunting grounds on the line of route.

Hitherto, Canada has been fortunate in dealing with the Indian element; and, in the present case, I see no reason for anticipating greater difficulty than has arisen in the past.

The only localities where the Indians are at all numerous, are at the Lake of the Woods and Rainy River, but the entire population does not greatly exceed three thousand. They can, however, collect in summer in larger numbers than Indians usually do, from the fact that they have abundance of food. This is afforded by the wild rice of the country which they collect, and by the fish which literally swarm in the lakes and rivers; some industry practised on their own part, too, in raising Indian corn, serves to supply them to a small extent. I have seen as many as five or six hundred of them collected at one time, at the rapids on Rainy River, engaged in catching sturgeon, the flesh of which they preserve by drying it like Pemican and then pounding it up and putting it, with a due mixture of oil, into bags made of sturgeon's skin.

They have a rude sort of Government, and the regulations made by their Chiefs are observed, it is said, better than laws usually are where there are no great means of enforcing them.

They are very intelligent, and are extremely jealous as to their right of soil and authority over the country which they occupy.

When the Red River Expedition first came in contact with them, they manifested some displeasure, and were not slow to express it, at parties being sent through their country, to explore and examine it, without their consent being first asked and obtained. On becoming better acquainted with them, we found it to our advantage to keep up a little friendly intercourse with the Chiefs, calling upon them as we passed, and interchanging a few presents of no great value. When we had adopted this course, all difficulties vanished, and, ere the explorations were brought to a close, they manifested and expressed an earnest wish to see the communication opened.

The chief danger which could arise of coming into unfriendly relations with the Indians, would be from having large parties of workmen in the vicinity of their encampments. Now, this is a contingency not likely to arise, from the fact that where the Indians are numerous the navigation is unimpeded and but little work required; but, as a rule, extreme prudence will always have to be observed by the officers in charge of men to keep them from coming in contact with the Indians.

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These Indians are all heathens, and never seem to have been in the slightest degree impressed by the Missionaries who have attempted their conversion. They are, however, very pious in their own way, and much of their time seems to be occupied in religious observances, which have their manifestation in long fasts and nights of watching, when they pretend to hold familiar intercourse with Spirits, whose presence, in the secret recesses of their lodges, is indicated by drum-beating, chanting, incantations and many unearthly noises besides. At stated intervals, the greatest and most solemn ceremony of the tribe, the Mystical Feast of the White Dog, is held at Fort Frances, and, at such times, the gravity and terrible earnestness of their demeanor would do no discredit to more civilized congregations.

In appearance these Indians are tall and well formed, and, in bearing, independent; sometimes, even a little saucy, but in their intercourse with strangers they are hospitable and kind. Their morality is said to be of a high order, as compared to that of the Indians of the Plains.

They are, in general, keen traders, and seem to know the value of what they get and give, as well as any people in the world. Some of those who assemble at Rainy River for the sturgeon fishing, in summer, come from Red Lake, in the neighboring State of Minnesota, where they possess hunting grounds; and, among these latter, are some who have been parties to treaties with the United States for relinquishing certain tracts for settlement, for which they are now in receipt of annual payments. The experience they have thus gained has rendered them expert diplomatists, as compared to Indians who have never had such advantages, and they have not failed to impress on their kindred and tribe, on Rainy River, the value of the lands which they hold on the line of route to Red River.

Any one who, in negotiating with these Indians, should suppose he had mere children to deal with, would find himself mistaken. In their manner of expressing themselves, indeed, they make use of a great deal of allegory, and their illustrations may at times appear childish enough, but, in their actual dealings, they are shrewd and sufficiently awake to their own interests, and, if the matter should be one of importance, affecting the general interests of the tribe, they neither reply to a proposition, nor make one themselves, until it is fully discussed and deliberated upon in Council of all the Chiefs.

The Chiefs are fond of asking any travellers, whom they believe to be of importance, to attend a Grand Council, as it affords them an opportunity of making speeches, which are meant quite as much to swell their importance in the eyes of their own people as to

impress the stranger; and with their people these meetings are popular, as it affords them an excuse for making a holiday, and coming out in all the varieties of colour which paint, unsparingly applied, can produce.

At these gatherings it is necessary to observe extreme caution in what is said, as, although they have no means of writing, there are always those present who are charged to keep every word in mind. As an instance of the manner in which records are in this way kept, without writing, I may mention that, on one occasion, at Fort Frances, the principal Chief of the tribe commenced an oration by repeating, almost verbatim, what I had said to him two years previously.

All this goes to show a certain stability of character, and a degree of importance attached to what they say, on such occasions, themselves, as well as to what they hear from others. The word of the Chiefs once passed, too, seems to be quite reliable, and this augurs well for the observance of any treaty that may be made with them.

For my own part, I would have the fullest reliance as to these Indians observing a treaty and adhering most strictly to all its provisions, if, in the first place, it were concluded *after full discussion, and after all its provisions were thoroughly understood by the Indians*, and if, in the next, it were never infringed upon by the whites, who are generally the first to break through Indian treaties.

THE TREATY.

From what I have said, I trust it will be seen that some sort of a treaty should be arrived at with the Indians. They are, as I have stated, desirous of seeing the communication opened, believing that it will conduce to their advantage, and I think a treaty with them should, in the first instance, be confined to this one point, namely, **RIGHT OF WAY**. This they expressed their willingness to accord many years ago, but the question of relinquishing land for settlement was always taken by them *en délibéré*. In this latter respect, what they are afraid of is, that settlers would interfere with the fisheries, from which they derive their chief means of subsistence, and I think it would, in the first instance, be imprudent to introduce settlement in the particular section which they occupy. The first great point is to get the communication opened, and the first treaty should be confined, as I have said, simply to *right of way*. By combining it with the land question, surveys of townships for settlement, reserves for the Indians, and so forth, complications might arise which would prove embarrassing.

There is but one point more, in relation to this subject, to which I would invite attention; it is the necessity of adopting the most

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rigorous and strict measures to prevent the conveyance of ardent liquors to the Indian country. This the officer in charge of the works can easily see to, if he is armed with the proper authority. There is no likelihood of any of the employés of the works taking spirits, in any quantity, with them, unless contractors are employed; but there are private traders who would follow in their wake, and would not be slow to bring liquor, if through it they could drive a trade for furs; and such persons should, if they made the attempt, be at once arrested.

The Indians at Rainy River and the Lake of the Woods are, as a general rule, in happy ignorance of what ardent liquor is. On the American side, the penalties against its introduction are so severe that it rarely makes its appearance, while on the British side its use is prohibited by the Hudson's Bay Company.

To these fortunate circumstances, I believe, are due the well-being and orderly demeanor of the Indians, and the rapid increase in the population which, in this section, is, in contrast to the general rule, said to be taking place.

The precautions which I have recommended will appear not to be unnecessary, when it is considered that these Indians, notwithstanding their many good qualities, are still but savages; that they, in common with all the untutored tribes of their race, are keen to resent an injury, real or supposed; that a quarrel with one prominent individual would be a quarrel with the tribe, and that the sole arbiters of a dispute with them are the scalping knife and tomahawk, to the use of which they are well practised in their unceasing wars with the Sioux; and when, along with all this, it is considered that they can muster five hundred fighting men, accustomed to the woods, the rivers, and every defile in the country, the expediency as well as the justice of keeping from them that first prolific source of Indian quarrels and Indian demoralization, "Fire Water," will be apparent.

I have only further to say, that, with ordinary prudence, there need be no risk of getting into difficulty with the Indians. They will extend a warm welcome, in the first instance, to the parties sent in by the Government, and it will be for the latter to see that nothing occurs to interrupt a continuance of friendly intercourse.

(See Notices of Indians, in my printed Report, pages 14 and 26.)

AGRICULTURAL RESOURCES.

LAKE SUPERIOR SECTION.

In this section the cultivable areas are of limited extent, and confined chiefly to the valleys of the streams. There are, however, occasional plateaux at a considerable elevation, showing a moderate depth of loam. In the vicinity of the line of route, the best locations will be found in the valley of the Kaministaquia, and on the shores of Thunder Bay. The climate of the country bordering on the lake shore is favorable to the growth of cereals, and all kinds of vegetables which are usually raised in other parts of Canada. When the mines at Thunder Bay, and on the north shore of Lake Superior generally, become developed, they will create a market for all kinds of agricultural produce, and this must render of great value such lands as are susceptible of cultivation.

Around the shores of Dog Lake, there are occasional patches of fair land, but the elevation of the country is such as to render the climate rather cold. On Dog River, and at the plateaux at the Height of Land, there is any amount of pasturage, and oats, potatoes, &c., might easily be raised.

THE LAKE REGION.

The eastern section of this region is cold, on account of its great elevation, but on descending to the westward the climate rapidly improves, and by the time Sturgeon Lake is reached, the summers are as long as at Lake Superior, and I think somewhat warmer.

Eastward of Sturgeon Lake, the rock formation is Laurentian, and, as usual in regions occupied by that series, the cultivable areas are limited in extent, although, where they do occur, the soil is often very rich. It is such a country as that now being settled on the Gatineau or Upper Ottawa, with this difference, that whereas on the Gatineau and Ottawa the valleys present rivers bordered with alluvial soil, the valleys in this region are occupied by lakes. There are, nevertheless, occasional spots occurring at intervals throughout the whole region, where the soil is good, and of sufficient extent for farms; but, as a rule, speaking generally, the country never can become an agricultural district.

There are those, however, who would prefer a mountainous and diversified region of this kind, to the level areas which are spread out like oceans, a little further to the west. Among the Laurentian hills, and on the borders of lakes studded with wooded islands, there are situations of surpassing beauty and magnificence. The forests abound in game, and the rivers and lakes are teeming with fish, water power is unlimited, and timber, which will yet find a market in the prairies of the West, is abundant.

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A farmer who should establish himself on any of the carrying places with horses and waggons, would soon realize an independence, as many have done in similar situations on the Ottawa. The first to locate themselves would have the advantage, and might hope soon to see villages growing up around them. No more advantageous situations could be desired than Jourdain's Rapids, the Prairie Portage, where there is an abundance of grass, or the French or Deux Rivières Portages, all of which, until a canal is made, must be places of land carriage and trans-shipment. Here, then, in the event of the communication being opened, would be a field for enterprise, to steady and industrious farmers, who could combine the cultivation of the land with the profitable employment of carrying freight over the portages.

In such situations, too, the growing wants of a new settlement would soon create a demand for various branches of industry. Boat-builders, blacksmiths and carpenters, would find ready employment where small craft had to be provided for such a length of inland navigation, and saw mills would be required to supply them with material.

But, to proceed in regard to the capacity of the country for agriculture, on getting to Sturgeon Lake, the climate is improved, but the ground is rough and broken, as it is also at Nequaquon and Nameukan Lakes. Rainy Lake is so much indented with bays, that in passing through it only headlands and islands can be seen, and these are often rocky; but I have heard it reported by the Indians that there are areas of very fine land about Rainy Lake.

LAKE OF THE WOODS AND FORT GARRY SECTIONS.

Arrived at Fort Frances, one hundred and ninety miles in an air line from Thunder Bay, the mountainous region is passed, and, commencing here, a beautiful tract of land extends along the bank of Rainy River to the Lake of the Woods. This tract is of the very richest alluvial soil, and in the whole distance there is not apparently an acre unsusceptible of cultivation. Old Indian gardens, growing vetches and wild grass, are met with at intervals on the banks, and the forests present basswood, oak and elm, with occasional white pines of gigantic proportions.

To this succeeds the Lake of the Woods, with fifty miles of navigation among islands varying in character, some fertile and others barren, but on some of which the Indians have grown maize from time immemorial. The section which comes next, that between the North-west Angle and the Prairie, as already described, is swampy. There are, nevertheless, occasional portions of it well adapted for settlement.

The wooded region ends with the section just referred to, and, from this point westward to the Rocky Mountains and north-westward to Peace River, the prevailing characteristic is prairie. These prairies are, for the most part, of rich alluvial loam, but they are in some places sandy, as on the upper portion of the South Branch of the Saskatchewan. So vast is the region, and the soil throughout the greater part of its extent so good, that it is no exaggeration to say the *cultivable areas may be reckoned by hundreds of millions of acres.*

The country is intersected with rivers, one of which, the Saskatchewan, drains an area greater than does the St. Lawrence, and is navigable for seven hundred miles of its course. From the South Branch of this great river, north-west to Peace River, the climate is adapted to the growth of wheat. Coal, salt, iron, gold and bitumen, are among the minerals to be found. Over the untilled fields which nature has spread out, the wild cattle of the plains roam in countless herds, and for hundreds of miles together may be seen grazing like domestic cattle in a field of pasture. A region which thus, in a state of nature, supports animal life in profusion, must be naturally rich, as regards its soil and climate. It is, in fact, fitted to sustain as dense an agricultural population as any area of equal extent on the face of the globe.

Such, in a brief view, is the country with which it is proposed to open communication; but to describe it further would be beyond the scope of this Report.

THE WORK OF LAST SUMMER.

In the month of May, last year, at the request of the Hon. Alex. Campbell, the then Commissioner of Crown Lands of Canada, I submitted an estimate of the probable cost of the works I had proposed in the Lake Superior Section, and an appropriation of \$55,900 having been made, on the same, from the Upper Canada Colonization Road Fund, as my time was greatly occupied by other engagements, it was eventually arranged that Mr. Bridgland, who had charge of the Upper Canada Colonization Roads, should undertake the road from Thunder Bay to Dog Lake, while, in regard to the dam, as he had no experience in works of the kind, I undertook to provide for its construction, and was accordingly instructed to lay out the work and place over it a competent superintendent, who should see to its management during my absence.

Under these arrangements, considering the lateness of the period of the season at which operations were commenced, a fair amount

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of work was accomplished. Six miles of the road were completed, under the able management of Mr. Snow, who had immediate charge of the working parties, and, at Dog Lake, under the direction of Mr. Joseph Samson, a considerable quantity of timber was got out for the dam. Boats and scows were built for the conveyance of stone and material to the work, and a suitable building erected for the accommodation of the workmen.

Much of the necessary material and tools for the road and dam, besides a small quantity of provisions, are now on hand, and it is greatly to be desired that the operations, so auspiciously commenced, should be proceeded with as early as possible in the spring, inasmuch as these works, as well as being of paramount and permanent necessity to the line of communication, will, when completed, be of great advantage in the first instance, in facilitating the conveyance of materials and supplies to works of similar character farther in the interior.

MR. J. W. BRIDGLAND'S REPORT.

I notice this document to correct an error into which Mr. Bridgland seems, inadvertently, to have fallen. He has projected, on a map, a line of Railway from Lake Superior to Rainy Lake, and, from the information gleaned from a mere preliminary report of mine, represents the country through which it would pass as being imperfectly examined, or wholly unexplored. Now, the fact is, that the region to which he refers, although not examined exactly with the view to a railway, has been explored to such an extent as to afford, at least, a fair knowledge of its topography. Messrs. Wells, Russell and Gaudet, Provincial Land Surveyors, crossed and recrossed it in various directions, as I, myself, also did, making surveys and determining levels over extensive sections, and should Mr. Bridgland ever visit the country, which he has not as yet done, I feel confident that he will perceive the accuracy of the description contained in my reports, and reproduced in an abridged form in this document, under the heads of "Lake Superior Section" and "Lake Region."

As regards the railroad, I have, in various reports submitted to the Government, explained that when the circumstances of the country would admit of works of such magnitude, and when the North-west Territories had attained a certain degree of development, a short line, of some twenty-five miles, from Thunder Bay to Dog Lake, would be of advantage, as would also a line from the North-west angle of the Lake of the Woods to Fort Garry, combining with these great works the improvement of the intermediate navi-

gation, by means of lock and dam, from Dog Lake to the Lake of the Woods.

Mr. Bridgland has adopted the same idea, with this difference, that he proposes a railroad of no less than *two hundred miles at the outset*, with *one lock* at Fort Frances. In either case, it will be observed that there must be intermediate navigation. Then, why not bring the navigation as close as possible to Lake Superior, so as to have a shorter railroad? A canal, supposing the lockage to average as much as that of the Rideau has done, would not cost half as much as a railroad of 200 miles in length, which latter, supposing it to involve no greater outlay than similar works in this country have averaged, would cost at least *eight millions of dollars*.

Such vast projects are as yet premature. In regard to Mr. Bridgland's scheme, as he professes no personal knowledge of the country, and merely submits it as a suggestion, I shall offer no further comment than to say that it would be useless to expend further sums of money in exploration of the route which he proposes, with the view to a railroad. His line, at the summit of the water-shed, would be at an elevation of some 1,500 feet above the level of Lake Superior, and that not in one gradual rise, but over successive hills and valleys. Further to the westward it would be on a sort of dividing ridge, between "long and irregular water-courses." Its course would be transverse to the strike of the gneiss which, over a considerable part of the route, is heaved up in mountain chains, or depressed in sharp valleys filled with lakes as already described, in this report, under the head of "Lake Region." Moreover, a railway of such considerable length should be so placed as to be available, at some future period, as a link in the extension of Canadian Railways to the vast prairies of the West, and, in this regard, Mr. Bridgland's proposed line would be quite out of the way.

I fully concur with him in his views as to the expediency of immediate and energetic action in opening such communication as would attract the trade of the western territories to this country, and I believe the plan which I have proposed would have the desired effect.

Respectfully submitted,
S. J. DAWSON.

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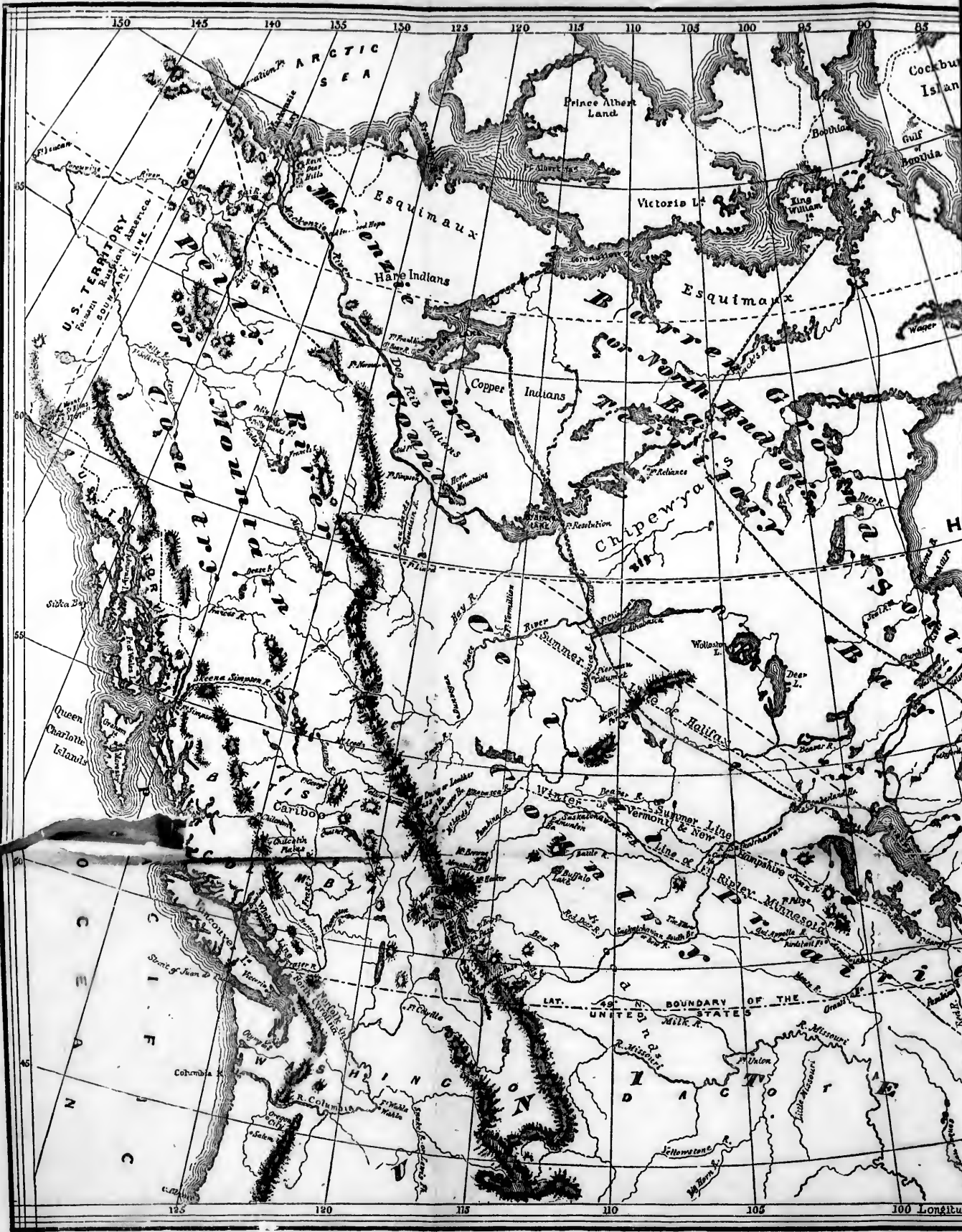
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WILLAMETTE RIVER
COLUMBIA RIVER

Esquimaux
Hare Indians
Copper Indians
Chipewya

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Cockburn Island
Gulf of Alaska
Bathurst Bay
North Bay
Hudson Bay

Caribo
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100 Longitude West of Greenwich

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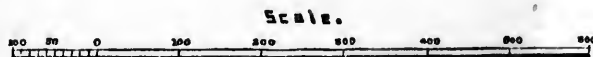
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THE DOMINION OF CANADA AND NORTHWEST & HUDSON'S BAY TERRITORIES.



— NOTES. —

International Boundaries. -----

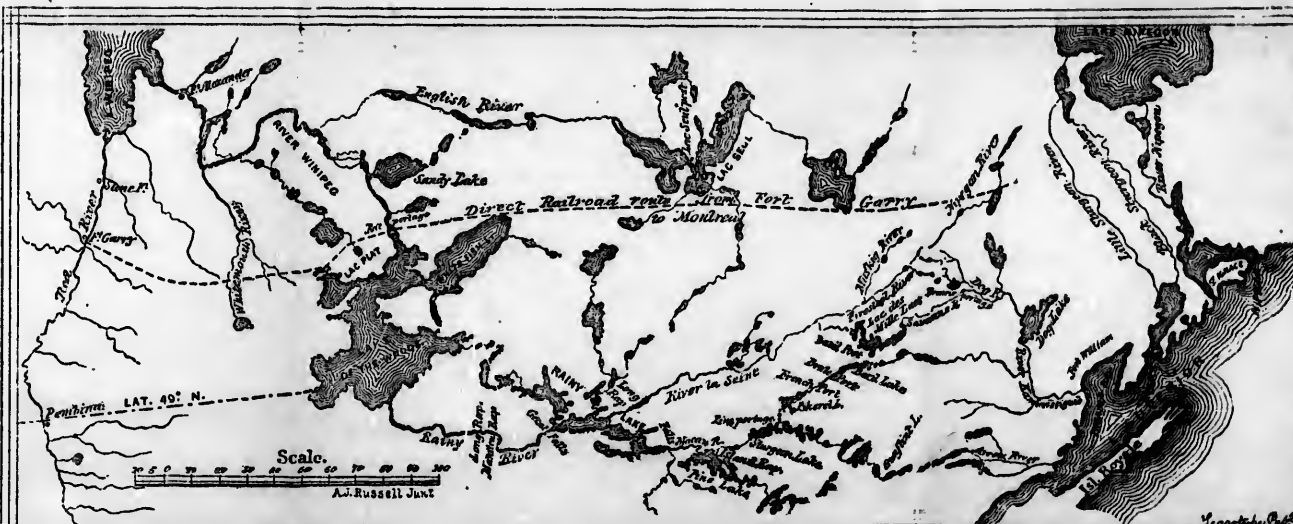
Provincial and Territorial Do. -----

Geological Boundaries. Laurentian-Huronian.
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The territorial names in *flow Italics* are assumed for convenience of description in the accompanying observations on the relation of the above Territories to Canada.

OTTAWA, 29th March 1868.—

A. J. Russell



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