(February 7th.)

Down The Mackenzie and Up The Yukon.

By Elihu Stewart.

AT a special evening meeting of the Canadian Club, Mr. Elihu Stewart, gave an address on his trip, "Down the Mackenzie and up the Yukon." The address was illustrated by stereoptican views. Mr. Stewart said:

Mr. President and Members of the Canadian Club of Toronto,—Perhaps no portion of America has received greater attention from the explorer during the last three centuries than the sub-arctic regions of Canada, and yet they remain practically unexplored up to the present day.

As early as 1577 Martin Frobisher spent some time on the borders of the Arctic. The name of Frobisher recalls his contemporary, Drake, and carries us back to the defeat of the Spanish Armada in which he performed a distinguished part, and for which he was honored by his king.

Later, about 1610, Henry Hudson sailed up the great river of the State of New York, and also into the Canadian inland sea, which, along with the above river, bears his name. Dearne went down the Coppermine to the sea and wintered there in 1770 and 1771.

To my mind the most distinguished of them all, Sir Alexander Mackenzie, made a journey in one short summer, that of 1789, from Lake Athabaska, then called the Lake of the Hills, down the Slave River, across the Great Slave Lake, and then all the way down the great river which received his name over 1,000 miles to the frozen ocean, returning the same season back to his starting point. He then ascended the Peace River, 600 miles to a point near Dunvegan, where he wintered. All of this in bark canoes, and much of it through an unknown region. The next season he ascended the Peace to its headwaters, crossed the Rocky Mountains, and finally, after enduring the greatest hardships, reached the Pacific, returning again by the same route to his post at Chipewyan.

Mr. Elihu Stewart was for some years Superintendent of Forestry in the Canadian Department of the Interior, and the trip here described was made in the course of his investigations for the Department as to timber conditions in the north country.

Sir John Franklin in his second expedition, accompanied by Dr. Richardson, made the journey down the Mackenzie in 1825.

Many, whose names I need not recall, also imbued with a spirit of adventure, have from time to time journeyed along the ice-bound coast and through that sub-arctic wilderness which now forms a part of the Dominion of Canada, and, yet, except along certain travelled routes, we to-day know very little of the country.

Any description of that vast region would be incomplete, and almost impossible without frequent reference to the trading companies that have operated there for many years.

The first and oldest of these is the Hudson's Bay Company, which received a royal charter from Charles II. in 1670. This company obtained great privileges over the country surrounding Hudson Bay, and the streams flowing into it.

In 1785 a great rival corporation was formed, viz., the North-West Company. They had their headquarters at Montreal, and were exceedingly enterprising. They not only established posts at various points on the great lakes of the St. Lawrence basin, but extended them into what the Hudson's Bay Company regarded as territory belonging exclusively to them on the Red River and the Saskatchewan; and even went into the regions far beyond where the older company had ever penetrated; even to the Pacific Sea on the on hand, and the Arctic on the other. Sir Alexander Mackenzie was an officer of the North-West Company. The presence of this new company in the waters tributary to Hudson Bay soon resulted in conflicts between the employees of the two corporations, and this state of affairs continued till they were amalgamated in the year 1821.

The Hudson's Bay Company brought their supplies from London to posts on the Hudson Bay, from which points they were distributed, while the North-West Company brought theirs also from London, but to Montreal, and from there every season transports in bark canoes were sent out with goods, which found their way, in some cases, even across the Rocky Mountains to the shores of the Pacific, and in others beyond the Arctic Circle to the north.

The area drained by the Mackenzie River is of vast extent, covering, as nearly as can be ascertained at present, a territory of 451,400 square miles. Its principal tributaries flow from the west. They consist of the Athabaska, the Peace and the Liard, with many others of smaller size. The area of the St. Lawrence basin above Montreal, including, of course,

all of our great lakes and the country tributary thereto, is only about 309,500 square miles, while that of the Saskatchewan and its two branches is only 159,000 square miles; so that the Mackenzie basin exceeds that of the St. Lawrence above the city of Montreal by over 140,000 square miles, and is nearly three times as great in extent as the basin of the Saskatchewan, and both of its great branches.

It was to make a journey down that great valley that I had set myself to accomplish, and knowing that this could best be done through the assistance of the Hudson's Bay Company, I applied to my friend Mr. Chipman, the Commissioner, from whom I had on previous occasions received many favors, and soon was in possession of a letter to their agents, which had only to be presented to secure all the hospitality that could be given in a country where hospitality means so much.

I left Edmonton on the 2nd of June, 1906, at which point I engaged a team of horses, and in three days reached Athabaska Landing. In this journey we passed over the height of land dividing the waters flowing into the Arctic from those emptying in Hudson Bay, but the elevation is so slight that it is not noticeable till we are within sight of the Athabaska, where the descent is considerable.

The country passed over for the first twenty-five or thirty miles is similar to that about Edmonton, the soil being first class and largely prairie. After this it is, for the most part, second class, with several miles of very light sand and timbered with jack or banksian pine.

The Athabaska, at the Landing, is from sixty to eighty rods wide, and at the time we saw it the water was of a yellow color, containing a large percentage of mud. Later in the season it becomes clearer.

From this point I was to go with the first transport of the Hudson's Bay Company, carrying supplies to their northern posts. We found the steamer "Midnight Sun" at the Landing, but had to wait three days till she was loaded. All being ready on the afternoon of the 8th of June she cut loose from the shore, was caught by the rapid current, and, with the whole village on the banks, waving us *bon voyage,* we were soon rushing down stream at about twelve miles an hour.

The steamer, in addition to her own load, towed six scows, each carrying about ten tons. Most of these small scows are built at the Landing, from rough spruce timber sawn at the little saw-mill there; they cost about $100.00 each and are seldom brought back, being usually broken up after reaching

their destination, and the lumber used for building purposes. The land rises in benches back from the river to the height of from 200 to 400 feet. It is generally wooded with poplar, spruce, birch, tamarac and willow, where the fire has not destroyed it.

The land, as we descend the stream, appears rather light as a rule, though there are apparently considerable tracts of fairly good soil.

At a distance of 120 miles below Athabaska Landing we reach Pelican Rapids. At this point the Dominion Government in boring for oil a few years ago, struck such a strong flow of gas that it interfered with further operations. The noise caused by the flow of gas, which was on fire, could be heard for upwards of half a mile distant. When first struck it could be heard a mile or more. The gas proceeds from a deposit of tar in the sand. The sands overlie the limestone, and, as we proceed down the river, they are visable at the surface. The area of the country where these are found is of very large extent, embracing several hundreds, or even thousands, of square miles, and are most observable along the banks of the Athabaska in the neighborhood of Fort McMurray.

According to a report made by Mr. R. G. McConnell, of the Geological Survey, they are also seen on the Slave and Peace rivers, as well as the Athabaska, and through other sections of the Mackenzie River basin. In the same report an analysis by Mr. Hoffmann of a specimen collected some years ago by Dr. Bell gave by weight:—

Bitumen	12.42 per cent.
Water	5.84 per cent.
Siliceous Sand	.73 per cent.,

and a cubic foot of this bituminous sand rock would give 41.59 lbs. of bitumen. This report estimates the area covered by this tar sand at 1,000 square miles, and the above analysis would give a bulk of 6.50 cubic miles of bitumen, and the amount of petroleum which must have issued from the underlying limestone would produce by weight 4,700,000,000 tons of bitumen.

This report also states that this tar sand evidences an upwelling of petroleum to the surface unequalled elsewhere in the world.

At the time of my visit a well was being put down near Fort McMurray with a hope of obtaining petroleum. It would seem very probable that this region will yet be an oil field of very large extent.

From Pelican Rapids our steamer had great difficulty in navigating the river for the next forty-five miles to Grand Rapids. And from the latter point for a distance of 87 miles to Fort McMurray, the journey had to be made in small boats or scows. These were heavily laden with the cargo from the steamer, and about a week was occupied in making the journey. Numerous small rapids were encountered, necessitating, in some cases, the unloading and reloading of the boats. Limestone rock takes the place of sandstone along the banks, and in many cases the scenery is very picturesque. There is a good covering of soil, but in many cases it is too light for agricultural purposes. The timber is small, and consists of poplar, birch and spruce, but about one-half the area has been recently burnt over.

The weather, at the time of my journey here, which was made in the last week of June, was very hot, the mercury ranging between 85 and 90 degrees in the shade.

A short distance above Fort McMurray there was observed what appeared to be the largest deposit of asphalt yet seen. It emitted a very distinct odor.

Fort McMurray, though not a post of very great importance at present, has a history of considerable interest. It was here that the weary traveller in the early days from far away Montreal, figuratively speaking, threw down his pack and gave a sigh of relief as he reached one of the great highways of the Mackenzie basin, after a journey by bark canoe, through a wilderness, for the distance of 2,500 miles.

It was the first of July, the natal day of the Dominion, that we arrived at Fort McMurray.

Upwards of twenty large boats and scows, with boatmen and passengers, numbering over a hundred in all, made a rather imposing appearance as we rowed and floated down the river on that bright and exceedingly hot morning. Every craft had some kind of a flag flying in honor of the day, which made us feel that though we were beyond the borders of civilization and within the great north wilderness we were still in our own country and viewing our own possessions. About noon, on rounding a point, where the Clearwater joins the Athabaska, a welcome object met our sight, the steamer "Grahame" tied at the bank at McMurray.

We soon shook off the dust of travel and once more entered a civilized state of existence. The "Grahame" is a large commodious boat, with comfortable state-rooms, but the traveller is expected to furnish his own blankets.

It was late in the afternoon of a very hot day, July 2nd, when we resumed our journey; and sitting on the deck I watched the picture before me; constantly changing in detail, and yet similar in character. The Clearwater mingling its contents reluctantly and slowly with that of the turbid Athabaska. Islands clothed with green spruce, recede from view as others appear in the distance. The sun declining, but so slowly that like the "Lotus Eaters," we could fancy it would always remain afternoon. Finally, however, it sank behind the hills, and then succeeded the almost equally delightful twilight.

I took many photographs during the journey which serve better than words to convey an idea of the appearance of the country. But there are two features that impressed me perhaps more than any others, and I wish that we could photograph them. They were these: the northern twilight and the silence that seemed to fall on the wilderness as the gathering shades increased, more and more till all nature was embraced in silent slumber. Frequently we tied up to the shore for the few dark hours that we had at this time, and in this latitude (later we had none) and this was the time, and here the place for meditation, unless a somnolent disposition demanded other employment. The dark sylvan solitude stretching out on every hand, and now wrapped in that lethean repose so akin to death as to be almost overwhelming in its intensity and impossible of description.

In the course of some twenty-four hours run there were evidences that we were approaching the mouth of the river. The stream had increased to double or treble the width it was above McMurray. The banks get low, willows begin to take the place of the poplar and the spruce. Islands on every hand seem to almost block the passage, then drowned land and great marshes stretch away to the horizon, and at last the waters of the "Lake of the Hills," now Lake Athabaska, are seen glistening to the east, while hills of red granite stretch far away along the shore, and at a distance of six or eight miles to the north, the white-washed buildings of Fort Chipewyan appear.

Another exceedingly hot day succeeded, the mercury even passing the hundred mark.

Again resuming our way, we soon pass out of the lake and enter the Slave River, which in a few hours receives a mighty river from the west, the Peace, which rising in the Rocky Mountains flows in an easterly direction, nearly 800 miles, to swell the volume of the great water system of our far north.

This accession renders the Slave below this point one of the great rivers of Canada. It now varies from a half mile to a mile or more in width. Islands become frequent and the current greatly increases.

Owing to a series of rapids between Smith's Landing and Fort Smith, a distance of 16 miles, steamers go no farther down than the former place. The goods are transported by waggons over this portage.

At Smith we found the "Wrigley," another steamer awaiting to carry us to Fort McPherson, a distance of 1,299 miles.

The "Midnight Sun" and the "Grahame" were flat-bottomed crafts, driven by large stern-wheels, and drew only about two feet of water, but the "Wrigley" was of a different type, being built like one of our lake boats, propelled by a screw-wheel and drawing five and a half feet of water, and the whole course of our journey from this point to Fort McPherson was made by her without interruption.

It is unnecessary to give a detailed description of the river or the country immediately below Fort Smith, as it is similar in appearance to that farther up the river, and also to that of the Athabaska. As we approached the mouth the usual conditions follow. The land falls away into swamp, willows again take the place of the spruce and poplar, islands are numerous, and after many devious courses between them, we behold, at last, the waters of Great Slave Lake.

The spring freshets had caught us at Fort McMurray, and all the way down from there, the water carried a very large percentage of alluvial soil, and resembled in appearance the historic "Yellow Tiber;" borne swiftly along its surface also, were trees that had withstood the storms and floods of a century along the banks of the Athabaska, the Peace, and hundreds of tributary streams all the way to the base of the Rocky Mountains. These annual floods have left along the shores and on the sandbars of the Slave River millions of feet of timber, sufficiently large for lumber.

As the waters widen out near the lake, the current decreases; the soil held in solution while the flow was rapid, now obeys the law of gravitation, and islands innumerable have been formed, while others in embryo exist in the sandbars for long distances in the neighborhood of the channel. It was difficult to follow the outlet to deep water, and we grounded several times after we thought we were well into the lake. However, by appliances peculiar to such navigation, we finally got into deep water, and an hour's run brought us to a fine bay, on which we beheld another white-washed village with a hundred or more Indian lodges in the foreground. This was Fort Resolution, and the lodges were the temporary habitations of the Chipewyan and Slavey Indians, who were assembled here for payment of treaty as they call it.

It was late in the afternoon when we entered the lake; we lost two or three hours on the sand-bars, and another in putting on wood, so that when we went ashore at Resolution it was near eleven o'clock at night. I remember thinking that we would have to make our journey short, so as to get back before dark; but what with a visit to the tent of Indian Commissioner Conroy and Dr. West, and the exchange of information from "outside" which we possessed, for that of the interior which they could furnish, and with a visit to the Indian camps, I was astonished to find that we had gone from one day into another without having experienced any intervening night between them. A dull twilight was giving way to a bright dawn, as we went aboard our ship. This was the beginning of constant daylight, that remained with us for several weeks.

I noticed in the gardens at Fort Resolution, potatoes, turnips, beets, peas, cabbage, etc. The potatoes were particularly good, and so far advanced that by August the first they would certainly be fit for use.

We had before us a large sheet of open water of over 100 miles to traverse. This would not be difficult were it not for the heavily laden scows that we were towing. Leaving Fort Resolution at about 2 o'clock on the morning of July 14th, we soon had to seek shelter under an island and wait for the sea to subside, which it did sufficiently to allow us to start again about 4 p.m., but for several hours it seemed doubtful if one of the boats, which was leaking badly, could be kept afloat till we obtained shelter at Hay river, and we were all glad to find when we arose the next morning, that the hard work of the crew of the leaky craft has been rewarded for their toil. She was among the other boats lying along the bank at Hay river mission, and without showing much damage either to the scow itself or to the cargo. The latter is much the more important as it contains supplies brought for such long distances, and at such great expense, and besides there are anxious men, women and children whose very existence depends on its reaching them in good condition. At this point the Rev. Mr. Marsh, of the Anglican Church, has established a very prosperous mission and school.

Awaking early in the morning, and before the crew or the inhabitants of the place had risen, I walked up the river and

found a sandy beach, and was soon enjoying a bath. While engaged in this luxury, I noticed that I had attracted the attention of half a dozen rather large sized and very hungry looking husky dogs, which came rushing down the bank barking furiously, and evidently thinking me a legitimate object of prey. In the whole course of my journey, this is the only instance where I was the subject of attack of any kind, and I must confess I felt greatly alarmed, as I realized my situation, and cannot help thinking that had it not been for some Indians suddenly appearing in a canoe around a point in the river who paddled quickly to my rescue, the consequences might have been serious. They probably thought I was some animal trying to escape them by swimming the river.

The morning was fine. The wind had subsided, and the great lake, which serves as a settling basin for the turbid waters entering it from the Slave river, was here as clear as that of the St. Lawrence. A few hours run brought us to a bay with many islands, which gradually contracted to a width of two or three miles, and we now realized from the current that we had entered the great river, into which all the waters that we have traversed flow. No more delays are now anticipated, no lakes to cross, no rapids to encounter, and no darkness to delay us on our course for the rest of the journey of a thousand miles to Fort McPherson.

The blowing of the whistle of the "Wrigley" early on the morning of the 15th of July, announced that we were approaching Fort Providence, and as the boat rounded an island in the river exclamations of astonishment were heard on every hand. There on the right bank of the river lay a village, for all the world like some of those along the St. Lawrence. The church, with bells ringing out a call to the Sunday morning service, the convent hard by with the Indian pupils in their pretty costumes accompanied by their teachers, the sisters of the mission, all lining the bank to welcome the founder of the school, Sister Ward, from Montreal, who accompanied us thus far. This devoted woman first went into that country forty years ago, where she was instrumental in organizing several schools during a residence there of over thirty years; and was at this time making a visit of inspection to them, intending to return before the season closed, to the home of her novitiate, the Convent of the Grey Nuns of Montreal.

A few words may be appropriate here regarding the character and appearance of the country, as we view it from this point. I have mentioned that the appearance of Fort Providence was suggestive of the parish villages along the St.

Lawrence. The river, too, both in its size and clearness of the water, which lasts till we reach the junction of the Liard, the appearance of the banks and the hills beyond are so like what we behold on the lower St. Lawrence, that we could almost fancy we were making a journey between Montreal and Quebec. Another surprise awaits us in the character of the soil, which is a rich alluvial deposit, very similar in quality and appearance to that in the fertile belt of our prairie provinces.

I am now referring to the land along the river. I had not an opportunity of making any exploration inland. It may be that much of the country is covered with muskeg, but, notwithstanding this, I am disposed to think that there are considerable areas adapted for agriculture along the Mackenzie between Great Slave lake and Fort Simpson.

In the garden of the mission at Fort Providence, at the time of our visit, namely, July 15th, were found: potatoes in flower, peas fit for use, tomatoes, rhubarb, beets, cabbage, onions, etc., while of fruits, were red currants, gooseberries, raspberries, saskatoons and ripe strawberries, and more important still, hard by was a small field of wheat. The latter, I understood, was sown on the twentieth of May and at this date, less than two months after, it was not only headed out, but the grain was fully formed and was in the milk. I learned, subsequently, that on the return of the steamer on the 28th of this month, the grain had been cut. This exceedingly rapid growth seems incredible, and can only be accounted for by the almost constant sunlight and heat, which the latitude of the place affords. This coupled with the moisture, from the frost, deep down in the soil, forces growth with hot-house rapidity.

A run of 161 miles brings us to Fort Simpson. It is prettily situated on the left bank of the Mackenzie, just below the mouth of the Liard. The water of the latter is muddy, and for miles below the junction, the clear waters of the larger stream refuse to mingle with those of its tributary. Finally, however, they are united, and from here on the waters of the great river resemble no longer those of the St. Lawrnce, but rather of the Saskatchewan and the Mississippi. It is one of the characteristics of those western rivers that they have no lake expansions, which would serve as settling basins and render the water clear. The Athabaska has none, neither has the Peace or the Liard, nor either of the Saskatchewan, or the Missouri, or the Mississippi, and the consequence is that in each case the water is muddy.

Fort Simpson in Lat. 61 deg. 52 min. N., and though it has lost some of its importance in recent years may still be regarded as the emporium of the Hudson's Bay Company for the Mackenzie District. It was here that the supplies were distributed, not only for the outlying posts farther down the river, but also for those up the Liard, and to numerous inland stations. From here, too, the *coureurs de bois* or "trippers," were sent out in winter to the Indian hunting grounds carrying with them by dog trains ammunition and blankets, and bringing back the furs of the country. It is the last point we visit, as we go north that contains certain of the vestiges of modern civilized life. The village can boast of a system of electric lighting, a needless luxury for a considerable part of the year when there is no darkness, but later when the sun declines so low in the heavens as to almost refuse to dispel the darkness, it serves to somewhat lessen the gloom of the winter night. It also possesses a museum containing stuffed specimens of the animals and birds of the arctic and sub-arctic forest. In the factor's residence is also to be seen a billiard table and other articles nowhere else found in the country. A saw-mill cuts timber for home use from spruce trees growing in the vicinity.

Wheat is sometimes grown in a primitive way for home use, probably the most northerly point that it has ever ripened in America. We are now nine hundred miles north of the international boundary, and though I do not desire to seem too optimistic, it is certainly some encouragement to those who have sanguine hopes of our country's future to know that the fertile soil of the Mackzenie valley, at least this far north, is not rendered unproductive owing to the high latitude.

We left Fort Simpson at 5 a.m. on July 17th, and in four hours caught first sight of the Rocky Mountains. The snow-clad peaks of the Nahanni Range, which attain a height of about 5,000 feet above sea level, served to break the monotony of the comparatively level landscape through which we had travelled for the past six weeks.

The weather had continued very hot, with only an exception of a day or two, from our start, but whether from the effect of the mountains or not, we experienced a very decided change in the temperature immediately we reached their vicinity, and from this on we suffered no more from the excessive heat, which had been as unpleasant as it was unexpected. We had counted on escaping the usual July heat, but so far it had really been more oppressive and certainly more constant, extending right through the long twenty-four hour day, than I had ever before experienced.

It strikes the observer as extraordinary that the Mackenzie in its way to the sea from Great Slave lake should bear off to the west, so far as to necessitate its cutting its way between two ranges of the Rocky Mountains, where a much shorter course and apparently one through a more level country lay open to the east into Coronation Gulf.

At a distance of 136 miles below Simpson, we reach Fort Wrigley. This is a new post; the old one of the same name twenty-five miles above having been abandoned owing to its unhealthy locality. The country about Fort Wrigley is fairly well wooded. I noticed a spruce log, cut in the vicinity which measured twenty inches in diameter.

The Nahanni river, which is a considerable stream, flows from the west and joins the Mackenzie about half-way between Simpson and Wrigley. Just north of it rises Mount Camsell, a snow-clad peak 5,000 feet high.

Below Wrigley the river narrows to from a half to three quarters of a mile in width. This continues for some distance and then widens out as we proceed down the stream. Two noted mountain peaks known as Mount Bompas and Mount Wrigley are seen between Wrigley and Norman. About twenty miles above Fort Norman and on the left side of the river the clay banks assume a very red appearance, and the people use the earth as paint. This condition of the earth has been produced by fire in the coal seams. For several miles along the route the fire is now apparently extinct, but as we reach a point eight miles above Fort Norman for upwards of two miles along the right bank of the river smoke is distinctly observed from fires still burning far down in seams of coal.

It is worthy of note that Sir Alexander Mackenzie makes mention of these fires in his narrative as existing in 1789 when he explored and gave his name to the river.

About sixty miles below Wrigley we pass the mouth of Salt river which flows from the east. It is so named from deposits of salt that exist some miles above the mouth. Rock salt is said to exist on the Great Bear river above Norman.

At 7 p.m., July 18th, we reached Fort Norman at the mouth of the Great Bear River, which is the outlet of Great Bear Lake. Fort Norman is distant from Fort Wrigley 184 miles, and 1,398 miles from Athabaska Landing. Its situation is very picturesque. The mountain peaks stand up in bold relief out of a vast level plain. Bear Mountain on the north

side of Great Bear River, and east of the Mackenzie is the most conspicuous.

It was 11.30 p.m. when we left Fort Norman, but there was no darkness, only a subdued light such as we have in more southern latitudes shortly after sunset. The steamer ran all night, and on rising on the morning of the 19th we were over half way between our last port and Fort Good Hope. Between Norman and Good Hope we have mountains on both sides of the river, and as we approach the latter and at about six miles above the Fort we enter the "upper ramparts of the Mackenzie." The great river is here contracted for some four miles to a width of about a quarter of a mile. On each side rise perpendicular walls of limestone rock to a height of from 100 to 500 feet which resemble huge fortifications. The river is here very deep, and a mile or two below the ramparts where it takes a sharp turn to the left, Fort Good Hope appears in view like another Gibraltar.

At 3.30 p.m. we reached Fort Good Hope, 174 miles below Fort Norman, 1,572 from Athabaska Landing, and only 26 south of the Arctic Circle. Its situation on a level plateau is charming. The banks are about thirty feet high and the soil is similar to that all along the river, being a rich deposit very much resembling the soil of our great prairies. I saw potatoes in flower, cabbages, onions, beets, etc., in the gardens, and on an island nearby very good spruce timber which is cut into lumber by whip-saws.

The steamer left Good Hope at 1 a.m., July 20th, and when we arose in the morning we found we had passed the Arctic Circle hours before. The banks of the river are getting lower, the river widens, and we are fast drifting down towards the Arctic Sea.

Some time in the evening we stopped at Arctic Red River Post at the mouth of a stream of the same name. It struck me as the least desirable place to live in of any in all this northland. A few houses, the church, and the graveyard are all crowded on the side of a hill. Perpetual frost is only a foot below the surface and we no longer see that emblem of civilized life, the vegetable and flower garden that has gone so far to make many of those lonely posts seem somewhat cheerful. We only stopped an hour or two at this post and then started for our last the most northerly post in the country, Fort McPherson.

About 1.30 a.m., July 21st, I rose as we were rounding Point Separation, so named from the parting here of Sir

John Franklin and Dr. Richardson when they separated for their perilous trip around the shores of the frozen ocean.

The sun was just skirting the northern horizon and I endeavored to take a photo of it which I am afraid was a failure. Point Separation lies between the junction of the Mackenzie and Peel Rivers. Below this point is the delta of the Mackenzie which is many miles in width, with numerous islands between here and the sea, which is some 80 miles distant. At the point where Franklin and Richardson were camped are two spruce trees which were marked as lobsticks at the time of their separation and in commemoration of that event. Both are still standing, though one of them is dead. Judging from their appearance at a distance I would say that they are each about sixteen inches in diameter and seventy feet in height, and this nearly 100 miles beyond the Arctic Circle. I have been very much interested in the tenacity of life as shown in the growth of trees under the adverse conditions prevailing in this north country. Since crossing the Arctic Circle we have seen no vegetables but trees such as the spruce, birch, tamarac and willows are seen all the way, and as we round Point Separation and ascend Peel River spruce lines the banks. It attains a size of twelve to sixteen inches, and is used at Fort McPherson not only for their log buildings but also is whip-sawed into lumber for general use.

After entering the Peel River the steamer stopped to take on wood, which delayed us a couple of hours, but very soon after starting we beheld on the high banks of the east side of the river the houses of Fort McPherson with the white tents or tupics of the Esquimaux on the beach below. These Esquimaux had come over in their whale boats from Herschel island in the Arctic Sea to meet the "Wrigley." Their complexion is almost white with a dash of ruddy color that indicates good health. They seem very cheerful, are not at all different or stoical like many of our Indian tribes. On the contrary they are very inquisitive and disposed to make themselves almost too familiar. They are of fair stature and do not show any of the marks of the struggle for existence that is observable in their neighbors, the Indians, in this part of the country.

At Fort McPherson, as at all the points visited for the last 1,300 miles of our journey, no news from the outside world had been received since the last winter mail in March. For over four months the news received was purely local, and generally consisted of reports from a few posts in the surrounding country, from hunting parties returning from their

winter quarters, and from the whalers entrapped by the ice in the sea at Herschel Island. We were the first to inform them of the eruption of Mount Vesuvius and the San Francisco earthquake, both of which had happened months before. Another message was one of sadness to all in this district. It was the death of Bishop Bompas who was well known and evidently highly esteemed by all.

A few words regarding Fort McPherson may be of interest. It is, as before stated, the most northerly of the Hudson's Bay Company's posts. Its latitude is 67 deg. 25 min., and it is truly an Arctic village. The sun never sets for about six weeks in summer, and is constantly below the horizon for the same time in winter. The thermometer went as low as 68 deg. below zero (Fahrenheit) last winter.

The inhabitants are in close touch with the Esquimaux of the Arctic Sea and with the whaling ships that annually visit these waters. These whalers are mostly from San Francisco, coming up through Behring Strait in the summer and returning again in the early fall. Last season, 1905 and 1906, most of them were entrapped by the ice that blocked the straits and were compelled to remain there for the winter. They went into winter quarters at Herschel Island where there is a detachment of the Royal Northwest Mounted Police. They were not sufficiently supplied with provisions for this emergency and had to rely largely on what could be obtained in the country. They engaged the Indians of the mainland to supply them with meat from the chase, principally moose, with the result that the shipment of fur this year from the post at McPherson was very much smaller than usual.

The report of the whalers of the ice conditions of the summer of 1905 is of interest to Arctic navigators. They say that the ice that drove into Behring Sea from the northeast and prevented their exit left that part of the ocean almost free of ice, a very unusual thing; and one of the captains is reported to have said that he was strongly tempted to set sail for the pole, as in his experience of twenty or twenty-five years he had never seen what seemed so good an opportunity of winning fame by such a venture. But he said his commission was to capture whales and not the pole. That these reports are correct is borne out by the fact that Captain Amunsden, who was exploring along the northeast coast finding open water to the west, set sail in that direction, and to his surprise soon found himself in the company of these whalers near the mouth of the Mackenzie. He was compelled to go into winter quarters, and laid up with them at Herschel Island till this

summer, when he succeeded in getting out through Behring Strait, being the first to make the entire northwest passage. During last winter he made an overland journey out to the Yukon and returned again to his ship the "Gjoa."

The "Wrigley" remained at McPherson only long enough to unload the supplies for this post and to put aboard the furs that had been secured during the year, and then left on her long journey up stream. She makes but the one trip to this point each year and is the only steamer that goes so far north.

At 12 o'clock at night she blew the whistle and soon left the village to resume its usual life for another year. As I walked across the sand-bar and climbed the bank, the northern sky was aglow with the midnight sun only a few degrees below the horizon.

The Indian boys were playing football, while the older members of the community went back to their homes and talked over the news so recently received. Standing on the high bank of the river with the outline of the steamer receding from view, I could not but reflect on the great expanse of country between here and the settled parts of Canada. Away across two thousand miles of forest, lake and prairie, I could see in imagination all the settlements we have yet made along the southern border; a mere fringe of our vast possessions.

But the question that the practical man will ask is, "Will it ever be worth anything?" In answer to this is might be said that it is already worth something for the furs it produces.

I have not statistics at hand, but when we look at any assembly in winter and see the costly furs that are now worn, most of them the products of our northern forests, we cannot but be impressed with the value thus represented, and there is one point to which I would ask attention, and it is this: that the uncultivable public domain should be devoted to the production of timber and the conserving of the fish and game of the country. The forest reserves may be made game preserves, where, by judicious care, the present annual product may not only be maintained but greatly increased.

But there are other resources. I have already referred to the soil and the products thereof at present growing far beyond the limits of regular settlement. I have also noticed the timber extending along our route almost to the frozen ocean. If nothing else, we have in the Arctic slope a world's supply of pulp-wood. We have in the cool waters of the North excellent fish in vast quantities, and last, we know enough of the presence of minerals of various kinds to almost

warrant the belief that there are other Klondikes and Cobalts in those unfrequented and unexplored regions.

Interesting as are the natural characteristics of the country and its undeveloped resources, the inhabitants who make their home there are at least worthy of greater attention. In the region traversed between Edmonton and Fort Yukon we meet with several tribes of Indians speaking as many different tongues. The first of these as we go north is the Crees, the Knisteneaux of Mackenzie. Then, as we reach Athabaska Lake we have the Chipewyans; next the Slaves, and lastly, the Loucheux. The Cree, the Chipewyan and the Slave, though differing much in speech resemble each other in character and appearance; but when we come to the Loucheux we seem to have reached a different type and one more closely allied to the eastern Asiatic than to the American Indian. They inhabit the country of the lower Mackenzie down to the sea and west along the Porcupine and lower Yukon. They are rather short in stature and dark in color, are very inquisitive and seem much disposed to imitate the white man. They are very devout in their religious observances, most of them being members of either the Anglican or Roman Catholic Church.

Any narrative of travel would be most incomplete that did not make reference to the missions of these two churches in the far north. At Chipewyan, Providence and Good Hope, the Roman Catholics have fine buildings and large schools, as well as at other points, while the English Church has established itself at most of the points. They also have schools at Fort Simpson, at Hay River, and I believe also at several of their other missions.

The Indian, the halfbreed, the white trader and his employees, and the missionaries constitute the very scattered population of that vast region between the borders of civilization on the south and the Arctic Sea on the north. To endure the rigorous climate, the isolation from civilized life with starvation constantly to be feared and the many deprivations incidental to the wilderness, one would think should have its compensations somewhere, but it must be said that they are not apparent to the ordinary observer. Such a life undoubtedly has some enjoyment for the young, active and vigorous, but for the afflicted and the aged the case is very sad.

At very many points visited we were implored for advice and for medicine by the sick. Many having chronic diseases which simple surgical treatment would cure are compelled to live out a shortened existence, for no physician except by merest chance ever visits them. The Department of Indian

Affairs has physicians who attend to the medical wants of those Indians that are under treaty, but throughout the whole valley of the Mackenzie River from Great Slave Lake to the sea, nearly a thousand miles, being outside of treaty limits, there is no physician to be had. Surely the people of this country would endorse any action that the Government might take for the relief of the afflicted there, and it has occurred to me that the establishment of a small hospital at Fort Simpson is something that would appeal to the charitably disposed among us if the need of it were only known.