THE SURVEYOR, PAST AND PRESENT, AND THE FUTURE PROSPECTS FOR HIM IN NORTHERN ONTARIO

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Reprinted from the 1909 Annual Report

In order to form some idea of what there is in the future for Ontario Land Surveyors it is necessary to have some idea of what they have accomplished in the past; the amount of work performed; the remuneration they have received and what still remains to be done in the newer districts now being opened up. In order to do this I will briefly review the surveys performed up to date and will first take the period between the cession by the Treaty of 1763 when surveys were first begun in Upper Canada and the year 1840.

From 1763 to 1792, 1,650,752 acres were surveyed in Upper Canada.

From 1792 to 1840, 14,174,777 acres at a cost of $148,000. From 1827 to 1840, 1,000,000 acres by the Canada Company in Huron Tract at a cost of 2 4-10 cents per acre; 30,-280 acres Indian Lands in Glengarry, and 330,000 acres on the Grand River by private individuals, making a total area surveyed up to 1840 of 17,185,809 acres. Between 1819 and 1829, inclusive, 3,623,675 acres; over 50 large townships were surveyed and nearly all paid for in lands at 4 1/2 per cent of the area. The average cost of the surveys from 1802 to 1840 is about 1 penny per acre. The contract system ceased in 1827 as it was found that the work was very carelessly performed.

From 1764 to 1789 the average cost of township surveys was £ 2 5s. per square mile, or about 1 2-3 cents per acre. From 1790 to 1800 the cost was £ 2 10s. to £3 per square mile, or less than 2 cents per acre. From 1801 to 1822, the average cost was 2 cents per acre.

Surveyors were then employed by the year, the remuneration being $1.00 to $1.50 per day when actually employed in the field, which was usually about 5 to 6 months in the year, and 25 cents per day for rations. When not engaged in the field the surveyor was allowed 60 cents per day but no allowance for rations.

In 1786, only five Deputy Surveyors were employed by Surveyor-General Samuel Holland, (Lewis Kotte, P. McNiff, Felix O'Hara, Lieutenant Tinling and Phillip Fry). These five men were employed at a total cost per day of £1 15s. when in the field and 16s. when otherwise engaged. Kotte and McNiff each received 7s. 6d when in the field, or $1.80 per diem. Each party consisted of the surveyor, 2 chainmen, who each received 2s. per day, 6 axemen 1s. 6d. per day, with an allowance of 1s. 3d. per day for rations, the rations to be of the following species: 1 1/2 lbs. of flour, 3/4 lb. pork and 1/2 pint of peas, the allowance 1s. 3d. Provincial Currency per man per day to cover all expenses whatsoever, such as transport, boat hire, camp kettles, axes, tomahawks, tents, bags, snowshoes, etc. The above rates continued to procure men at the old rate of wages, and in 1815 after the war, the scale increased to 10s. cur-

rency per day for surveyors, 3s. 9d for chainmen, 2s. 9d for axemen, with the usual allowance for rations.

On the allowances for wages and rations a surveyor could not in those days be generous, in most cases he went into the woods without even a tent, and when it rained the men peeled bark from the trees and made a rude shelter of it or constructed brush camps or a lean-to, and it often happened that they had to lie down without any covering. There is no allowance of tea or coffee with the rations of flour, pork and peas, and the early records do not give the hint of other beverages, although from the diary of one of the early surveyors while surveying the swamp lands in Essex County it appears that he began with the purchase of a barrel of flour, a barrel of pork and a barrel of whiskey. This Surveyor had evidently read the reports of the surveyors who had preceded him in that section in which they state that the country was nearly all a dense swamp infested in the summer season with venomous flies and poisonous snakes, and to provide against these and the evil affects of drinking swamp water took a generous supply of alcohol.

In 1819 a new scheme was introduced. Township surveys were let by contract and payment made in a percentage of the lands, the common allowance being 4 1/2 per cent of the area surveyed and if the township was shown to be swampy or broken the land might be selected elsewhere. This continued until 1827.

From 1828 to 1836 the cost was regulated by the tariff of rates authorized by O.C. $20.00 per 1000 acres or 2c. per acre. From 1837 to 1850 the system of paying the surveyor and party by the day was resumed, the average cost per lineal mile being about $20.00 to $18.00. Chainmen and explorers were allowed $1.00 per day, assistant chainmen, 75c., axemen 60c., other assistants 50c., and rations 50c.

The O.C. of September 14th, 1963, allowed surveyors to pay to their men the current rate of wages.

In 1855 A.P. Salter was paid $6.00 per day outlining townships on the north shore of Lake Huron, and at $2.00 per day for his assistant, $1.00 per man for his men and $1.00 per day for rations.

In 1861 the contract system was again introduced, 6 1/2c. per acre being the allowance on township work, on other work $4.00 per day to the surveyor, $1.00 to first chainman, 75c to second chainman, 60c to axemen, 50c to other assistants and 50c per diem for rations. This continued up to 1872 when wages to surveyors were increased to $6.00 per diem, and for townships on the north shore of Lake Superior and Huron 10c. per acre was paid in 1873.

In 1875, the price per acre was fixed at 7c. and remained so until 1903, when it was increased to 9c. per acre over the Height of Land.

The per diem allowance to surveyors for over 20 years prior to 1900 was from $6.00 to $8.00, for base and meridian lines $36.00 to $55.00 per mile. The present price paid by the Government for day work is $10.00 with rations or an allowance of 65c. per day and for base and meridian line work $55.00 to $75.00 per mile depending upon the locality and for subdividing 6 mile townships 10c. per acre.

While the price per acre paid the Government has increased materially it might here be pointed out, however, that the Department require a much higher class of work of the surveyors to-day than was required over twenty years ago. Very few of the surveyors to-day ever take a compass to the work, all the lines are run with the transit well opened and well blazed. This cannot be said of a great deal of the work performed before 1886 when many of the townships were run almost entirely with the compass.

In the ten years between 1827 and 1836 over 3 million acres of land was subdivided into lots; in 1853 no less than 553,000 acres at cost of only $13,000 or 2 1-3 cents per acre, one fourth the amount it would cost to-day.

The Government of Ontario has expended in the last two years more money in surveys than it cost to survey one-half of Old Ontario, prior to 1840. The cost of labour has increased in the last 50 years, including rations, from $1.00 to $2.75 per day, and the actual amount of work performed by a labourer has been decreased by 1-3. Good men could then be procured for $18.00 per month and board. It was no uncommon thing for a surveyor 40 years ago to subdivide 3 large townships in a season with a party not exceeding 10 men. 25 years ago the average length of a working day on a survey in the summer season was over 13 hours and work was seldom discontinued for rain. The most conscientious surveyors, however, remained in camp during a heavy rain if it began before breakfast, but the invariable rule was that if a man once left the camp, he should not return as he would get wet returning, and for that reason might as well work all day in the rain or snow. The surveyor would frequently rise an hour earlier if there was any likelihood of it raining before breakfast so as to enable him to get out of sight of the camp before it began to rain heavily.

The life of a surveyor to-day has improved in this respect. Conditions have forced him to change his methods. He has learned that men cannot give good results if not properly sheltered and fed. Few, if any, surveyors would to-day undertake the survey of a new township without tents, and in the winter season without stoves and a comfortable supply of blankets. We have travelled a long way since the surveyor was content to sleep in a

brush camp or lean-to or roll himself in a blanket on balsam boughs before a camp fire, and while pork, beans, bread and tea still form the staple supplies, all the articles generally found in the best boarding houses are found on the surveyor's list - butter, cheese, vegetables, pickles, ham and bacon, etc. Twenty years ago the Department of Crown Lands would not allow bacon or hams on the ration list and as for pickles or cheese if such articles appeared it was sufficient to destroy the surveyor's prospects of another Government survey. Joseph Cozens, O.L.S. of the Soo, well known to nearly all of the older members of the profession, was the first surveyor to break through the lines. I believe it was in 1895 or 1896, two bottles of pickles were found on Joseph's list of supplies. As it was a small item, this was allowed to pass although it was forming a precedent, but had there been three bottles the account would, I believe, have been rejected. The next season Joseph went one better as pickles and jam appeared on the same account and this was more than the Auditor would stand and both were struck off, but conditions have gradually changed for the better and in the last fifteen years and to-day all the necessary articles of diet are allowed. It is now considered that an Ontario Land Surveyor and his men are entitled to the same articles of supply as other men or like work and under similar conditions-the best is none too good and more profitable.

Up to the present date little over 46 million acres have been surveyed and subdivided in Ontario out of a total of 140 million acres, scarcely one-third of the Province, and while it may here be said that probably not more than 20 million acres of the unsurveyed portion is suitable for agricultural purposes, yet there is besides the agricultural lands a large area of mineral lands that will in the not distant future require to be surveyed into mining claims and at least two-thirds of the total unsurveyed area will require to be outlined into timber or pulpwood limits in the next 25 years, and if the Province succeeds in acquiring from the Dominion Government, as no doubt it will, the east part of the unsurveyed District of Keewatin, comprising an area estimated at 146,000 square miles, in which not a mile of line has yet been blazed out or a stream traversed, a territory less known than the country bordering on Hudson's Bay, the survey of this additional new territory will in the next 25 years afford profitable employment to many surveyors, and as part of the territory lies in a section supposed to be mineralized, there will be quite a future in this new territory, equal in area almost to the whole of what we now call New Ontario. For surveyors who may have acquired a knowledge of mineralogy and mining engineering, as several of them have among the younger graduates, the rapid development of the immense pulpwood resources, will cause the development of many water powers which are to be found in that District, as well as its agricultural lands. All this development of New Ontario's natural resources will mean much to the younger members of our Association, and to-day I am confident that the future prospects of the surveyor now entering the profession are much brighter than they appeared 20 years ago. The surveyor of the future will, I think, require to be better equipped than was the surveyor of the past if he expects to succeed in New Ontario. He will require to have a better knowledge of geology, mineralogy, timber, forestry and hydraulics, if he expects to share in the work which should properly belong to the Land Surveyor.

Looking back over the reports of some of the older surveyors made within the last 40 years, I find the following stereotype expressions appearing in probably one-half of the reports on township surveys: "No indications of economic minerals were met with, the rocks are chiefly granite, the timber is chiefly pine of small size and of no commercial value," etc., although many of the townships as above described have turned out rich in mineral. Granite has not even been found and the timber on many of these townships described as being of no commercial value has been sold for from $100,000 to half a million dollars. So misleading have been many of the reports of the younger surveyors on the quality, quantity and value of the timber on many of these townships that for many years past, I regret to say that the timber reports are very seldom consulted, except those of the older and experienced surveyors.

This state of affairs should not continue. It is an easy matter for one to learn the art of scaling logs or measuring timber or to know what constitutes a defect in a log, but how many of the younger surveyors who making a survey of a new township for the first time can detect whether the timber met with is faulty or not and what its defects are. They can measure the diameter of a tree but cannot scale a log nor tell how much lumber it will cut. They have never looked into a timber scale book and whether a mile will cut a million feet B M or 5 they are unable to form an opinion unless some axeman on the party happens to give them the information. What confidence, therefore, can the Government or a Railway Company, who are greatly interested in tie timber, or a lumber firm place on their reports, and the same remarks will apply to the value of some of the reports with reference to water powers. It is not expected that a surveyor should be a geologist, but every surveyor should have sufficient knowledge of the different rock formations as to be able to classify them in the field. The surveyors to-day are not reaping the harvest in Northern Ontario they should as there is an impression that a land surveyor in not expected to have a knowledge of timber, minerals, or water powers. Under the present Act he is not required to be examined on these subjects. ols