

The returns were complete, and they disclosed the following facts:—

	Urban.	Rural.	Total.
Protected crossings .....	587	492	1,079
Unprotected crossings .....	1,767	15,426	17,193
Total .....	2,354	15,918	18,272

It will be seen that 3.09 per cent. of rural, and 24.93 of urban, crossings were protected. The term "urban" is here applied to cities and towns. Villages are classified as rural.

As to the means by which protection was afforded, the following summary gives the facts in that regard:—

How Protected.	Rural.	Urban.
By gates .....	34	133
By overhead bridges .....	190	110
By subways .....	213	166
By bells .....	39	77
By watchmen .....	16	101
Total .....	492	587

The inquiry as to highway crossings will be continued, and the information thus gathered will accurately show to what extent the menace from this source is being reduced by the adoption of protective measures.

#### RELATION OF THE SURVEYOR, ETC.

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and which has been such as to command the attention of the world. We have only touched the fringe of our immense mineralized area, but we have a total of over \$130,000,000 realized from the mines of the Yukon in about twenty years; the \$20,000,000 which has been realized from the mines at Sud-Cobalt in the last five or six years; the developments at Cobalt, at which point the discovery of valuable mineral deposits was coincident with the construction of the Canadian Pacific Railway twenty-five years ago, and many other developments in mining, and I need not of course point out to you how much this great increase of wealth in Canada has meant to the profession of engineering. But, after all the main and abiding source of prosperity of any country is the development and proper utilization of its lands, and we in Canada can refer with much pride to this source of the prosperity of our country. If you would allow me I would like to read half a dozen lines from a recent article by Mr. James J. Hill, of St. Paul, an authority of world-wide repute on all such matters, in speaking of the importance of the land development of a country:

"It is made clear by every process of logic and by the proof of historic fact that the wealth of a nation, the character of its people, the quality and permanence of its institutions are all dependent upon a sound and sufficient agricultural foundation. Not armies or navies or commerce or diversity of manufacture or anything other than the farm is the anchor which will hold through the storms of time that sweep all else away."

We of the profession of surveying, we Dominion Land Surveyors, have been engaged during the last twenty or thirty years in converting into farms for use, by the limitation of land boundaries the fertile prairies of the prairie provinces—the three Western Provinces—those prairies which were described by the Hon. Clifford Sifton in his masterly address at the first meeting of the National Commission of Conservation, recently in Ottawa, as "the pride and the hope of Canada."

The mention of that Conservation meeting gives me occasion to say that in my humble judgment there was then inaugurated a work yet destined to occupy a very important place in the public mind in this country, and if you will allow me to do so, Mr. President, on this occasion, I would like to

say to the members of this society, Watch this Conservation movement, attach yourselves to it, help it along, grow up with it. In the collection and dissemination of information about the natural resources of this country and in the broader and larger view of Canadian citizenship, which its work should bring about for all Canadians, much benefit should result for the engineers.

I referred a few moments ago to the Hon. Mr. Sifton's characterization of our fertile prairies as the "pride and the hope of Canada." It was pointed out in this city a few days ago by the Hon. the Minister of Agriculture, that upon an area of 12,000,000 acres on these prairies last year there was raised an aggregate value of grain of \$195,000,000. He might have also said that to that immense sum about \$20,000,000 might be added for the results of the raising of cattle and the products of cattle. When I tell you gentlemen, that we Dominion Land Surveyors have surveyed a total area in that country of 145,000,000 acres, all agricultural land, mark you, and we hope to survey about 50,000,000 acres more, and when you consider that the area under cultivation was only 12,000,000 acres, it must open up to your minds when you reflect upon it, the enormous development which is to take place and which must mean more perhaps to the profession of engineering than to any other calling in Canada. Supposing that one were to imagine that for any reason it might be necessary to stop opening up new land in the West so that we could not develop one single acre more of prairie land than was placed under cultivation last year. Is not a country which can produce over \$200,000,000 annually from 12,000,000 acres of land, and we should be able to do at least that, indefinitely, a country which is going to enjoy great prosperity? We had an average of 21 or 22 bushels of wheat to the acre last year as compared with about 15 bushels in the United States, but the average in England is 33 bushels to the acre, and about 41 bushels in Scotland. Are we to say that our magnificent prairie lands, with the intelligent study with which we have a right to expect we Canadians can give to the question, and with the advantage in retention of soil fertility which our winter climate gives cannot reach the same maximum of production as in those older countries. If, as I have in these few words tried to picture to you, there is the reasonable certainty for the future of a high degree of prosperity for all Canada, based mainly upon the land wealth of our prairies, for I speak as a Dominion Land Surveyor, only of the lands in that part of Canada, does it not mean activity in railway construction, development of inland waterways, development of water-powers, and municipal undertakings of various kinds from the increased population. The figures I have given on our Western lands, on which I venture to express somewhat optimistic views as to the future for Canadians, and especially for engineers, are not mere rhetorical statements, for I speak with some sense of responsibility—these being matters as to which it is both my duty and privilege to be informed upon, and therefore Mr. President, may I not say with confidence to the members of this society—you may feel well pleased with the outlook before you.

Just this word in conclusion. Sir Thomas Shaughnessy, head of the Canadian Pacific Railway Company, a captain of over 80,000 men with over 5,000 miles of railway in the Western Provinces, and therefore so much better qualified than I am to speak on the subject, asked not long ago in a notable speech in Toronto: "Where is the man with the requisite temerity to make a forecast of the conditions in Manitoba, Saskatchewan, Alberta and British Columbia? I would not say in a quarter of a century—that would be too long—but in ten years."