

almost solely, and not to consider the cost of individual sections. This is a debatable point and we have so far no legal decisions to interpret the exact meaning of the governing Act.

Another point which causes difficulty is to determine the location of the line where benefit from drain ceases. It has been sometimes suggested that only the wet or flooded area can be properly assessed, but this is not equitable, especially in a flat district, and therefore agricultural lands which are made more useful by subsoil drainage should be made to bear a share of the cost. In making assessment on such lands, the engineer should be particularly careful to have very complete information as to land levels, valuations and suitability of soil for agricultural purposes, and be able to supply data to prove that such lands would be benefited. This is, in my opinion, the most likely point in the assessment to be disputed.

In making assessments on municipalities, they are usually arrived at by estimating the saving (or benefit) through drainage in grading, bridge and culvert work and maintenance of all highways which would be affected. This applies to roads which are considered as necessary in the district and does not refer to all road allowances. (The assessment on municipalities so far in Saskatchewan has been from 20 to 40 per cent. of the cost of work and none so far have been disputed.)

The benefits to each parcel and to the municipalities affected are then totaled and this amount is divided into the cost, giving a percentage rate, and the assessment for any individual parcel can then be arrived at by multiplying the estimated benefit by this percentage. The plans, profiles, estimate of cost and assessment are then prepared and submitted to the Minister of Highways, who notifies all interested owners by advertisement that it is proposed to carry out such work and as to what the cost to each parcel is estimated to be. It is now necessary for an owner to appeal against the carrying out of the work if he has any objection and provided that the resident owners of at least one-half the area of resident owners still desire the improvement, it is proceeded with. It might be noted that the resident owners have the entire authority in deciding whether they secure the improvement or not. The difficulty in this is that the resident owner must estimate what effect the drain will have, as he must satisfy himself on this point in order to pass upon the scheme intelligently.

In the construction work there has been no peculiarities different from construction elsewhere, the main drawback is the short season, as ditch work can only be successfully carried on between May 15th and about November 10th. This explains the high excavation cost in this province.

The floating dipper excavator, the dryland dipper excavator and the Lount drag line excavator, have been used with success and it is not necessary to describe the details of these machines as they are in common use in various provinces.

There have been twelve drains constructed under the Act so far and the effect of these is being recorded by inspection from time to time in order that improvements may be made in future work. In connection with the carrying out of certain proposed works the question of method of assessment from lands which have not yet been filed on (owing to these being lake or slough bottoms) has not been finally settled and when this is arranged for several large undertakings will be proceeded with, and with these being carried out we may look forward to valuable additions to the agricultural lands of this province.

THE CANADIAN RAILWAY PROBLEM.*

By Sir Henry L. Drayton, K.C.,

Member of the Railway Inquiry Commission.

THE Canadian railway problem is a vast one and cannot be shelved by any temporary expedient. Mere drifting, the gift of a few more millions here and there will merely add to the difficulties of the situation when the final day of settlement comes, as come it will. The subject is too large for me to attempt to cover in the time at my disposal but I desire to specially call your attention to a few outstanding considerations.

In the first instance, I draw your attention to the great investment the country has already made in railways. Including subsidies, gifts, guarantees, moneys realized from land grants by companies and also the sum expended in government construction, the country's investment amounts to \$968,451,737. In these days of terrific war efforts and expenditure, millions and even billions are apt to lose their proper significance. The total amount I have quoted is not final, as it does not include the value of unsold lands granted as bonuses, the value of which is over \$100,000,000.

Let us, however, deal with round figures and take one billion dollars as representing the total amount the country has provided for railway purposes. The significance of this sum is hard to grasp.

Toronto is no mean city. Toronto's present total assessment for land is \$289,084,898, and for buildings \$218,434,573. Notwithstanding the city's area, improvements and importance according to the valuation of your assessment department, it takes two Torontos to cover the country's transportation contributions.

Notwithstanding these enormous contributions, railway necessities were never since Confederation greater than they are to-day. The people of Canada to-day own the National Transcontinental, costing \$159,881,197; the Intercolonial, costing \$116,234,204, and the Prince Edward Island, costing \$9,496,567, resulting in a total of \$285,611,968. Deducting this from our total of \$1,000,000,000, you have no less than \$714,388,032 supplied either by the public credits, moneys or lands for the purposes of railway companies privately controlled and more, much more, is required.

We stand at the parting of the ways. Shall the country again accept the estimates of the companies and supply them with further fortunes, or shall the railway facilities of the country be co-ordinated to the fullest extent necessary to meet the exigencies of the situation and the wasteful duplication of lines and terminals at the country's expense cease? Can the country afford, in view of war obligations—in view of the necessity universally admitted of the strictest national economy—to supply all the money required for company expansion? I confidently submit that to state the question gives the answer. Because the issue is so large and important it is all the more necessary that it be faced boldly and with courage by the country. Every citizen ought to acquaint himself with the facts. It is your business, it is your money, and your future that may in no small regard depend on an honest, fair and proper solution of the question.

I would like everyone to carefully read and consider the railway reports—Mr. Smith's just as carefully and sympathetically as that signed by Mr. Acworth and myself.

*From address before the Canadian Club, at Toronto, May 10th, 1917.