

extend higher than six inches or a foot below the top of the abutment, the top of the abutment to be finished with fine concrete. The rubble stone should not, under any circumstances, extend into the arch.

All cement employed in the work should be of a favorably known brand of Port land cement. It should be delivered in barrels or equally tight receptacles, and, after delivery, protected from the weather by storing in a tight building or by a suitable covering. The packages should not be laid directly on the ground, but should be placed on boards raised a few inches from it.

The stone used should be granite, quartzite, fine-grained limestone or other equally strong and durable stone, care being taken to exclude soft limestone, friable sandstone, and stone affected by the atmosphere. It should be broken into varying sizes, the largest to pass, any way, through a two inch ring. The sand used should be clean, sharp, silicious and of varying sized grain. The water used should be clean and care should be taken not to use an excessive amount. The concrete, when mixed and ready for work, to have the consistency of freshly dug earth.

Care should be taken to make the extrados of the arch a smooth, regular surface, such that moisture will not find lodgment. All framework and centring should be of dressed, well-fitted lumber, and the concrete should be perfectly rammed into place, so that all surfaces will be smooth, without cavities, when the casing is removed.

While the work is in progress, it should be so arranged that a steady supply of mixed concrete will pass from the mixing-box to the point where it is to be placed. At any time, when the work is interrupted before its completion, or at the end of the day, a wet covering should be placed over the last layer of concrete; before the work of depositing the concrete is resumed, this surface should be thoroughly flushed with water to remove any foreign material which may have gathered thereon. No concrete should be laid in wet or freezing weather.

#### Provincial Co-operation.

Good roads are essential to the full development of agriculture. In a country such as Ontario, dependent upon agriculture, this means that good roads are of very great importance to the towns and cities as well. The towns have been created by the country, and as the country prospers so will the towns progress. Good roads are not of benefit to any one class of the community; they are of universal value. This is a matter of which too narrow a view has been taken in Ontario. If we must have canals and railways, then we must have good country roads. It has been taken for granted that if the country as a whole constructed canals and sub-sidized railways, the common roads could take care of themselves.

But this has not been the case. The country roads of Ontario are in a deplorable condition, at certain seasons of the year actually impassible as avenues of trade.

From their own point of view, the farmers of Ontario are becoming keenly alive to the situation. That the roads of the province are not by any means in a satisfactory condition is well recognized. That the system of management which has prevailed is largely responsible for this is also well understood.

With them the question is not as a rule one of proving that the roads are bad, nor that the system of building and maintaining them is defective. That part of the good roads agitation has been largely accomplished. The chief task now consists in getting the people to thoroughly understand the new systems of management which are proposed in the place of the old. The more progressive citizens in every township who have studied the question of road reform are anxious for a change. The obstacle lies with the many who are not acquainted with the plan proposed, and whom, for various causes, it is difficult to reach with a fair explanation.

#### ALL SHOULD BE TAXED.

The broader aspect of the question has recently been given prominence by the decision of the Provincial government to appropriate \$1,000,000 for road improvement. This, for lack of a better name, has been termed government "aid" or "assistance." This is unfair both to the reason for the appropriation and to those who receive it. It is not a gratuity. It is a recognition of the value of good roads to every citizen of the country, and a proclamation that all should be taxed for their maintenance.

The object of the present measure is not to aid by the gratuitous distributing of money, but has for its aim a manly, a nobler purpose, and the bill shows the handiwork of a true statesman. While it aims to encourage the doing of a work which is acknowledged by all as being an important and a necessary service, its prime object is to equalize the burden of cost by levying a tax on every citizen in proportion to the benefit each derives. The unfairness and injustice of the present system of taxation for highway construction is so noticeable as to be a matter of wonderment that some step of this kind had not been, ere this, devised by government or compelled by the people.

#### WHEN TOLL-ROADS WERE OF SERVICE.

In the early history of the country, before the era of railways, when long distances had to be travelled by highway, when the people could not afford to build good roads, and when some improvement was necessary to carry on the business of the country, turn-pike companies were formed, and leading lines of highway in every part of the province were improved by them. These companies were permitted to toll or charge every individual

using the road. In this way those who used the roads paid for that road. This plan was, and is to-day, in the minds of many people, a correct system and it is a popular phrase that "those who use the roads should pay for maintaining them."

This system, through restriction, annoyance and inconvenience, is very objectionable. In addition it is very unfair in this, that the roads of the country are an indispensable public service, a benefit to every citizen, whether a direct user of the road or not, and consequently should be maintained by a universal tax. The latter method has found general acceptance in this country. In many sections the private companies have been completely dissolved and the tolls abolished. Few still remain, and would long since have disappeared were it not for their peculiar location, and the difficulty encountered in arraying an entire municipality against an isolated road. There is also an objection to providing what seems a large sum of money for an apparently dilapidated work.

The object of doing away with toll roads is to make the tax a general one, yet by dividing the work up into small areas, such as townships, making, in the older part of Ontario, 500 different sections, each to maintain the work within their own limits at their own cost, regardless of location, area, population, character of traffic, purposes for which the roads are used, etc., it makes this general tax so unfair as to discourage any extended effort to accomplish this work. It permits many of the largest users to go practically free.

#### THE INFLUENCE OF TOWNS AND CITIES.

Under the present system of free roads, municipalities, whether city, town or township, are supposed to maintain the roads within their limits. Were the traffic of a purely local nature, such a plan would be sufficient and equitable, but drawn as it is from different sections and concentrated on certain lines by various attractions, very often certain townships have to contribute as much to provide for foreign travel as for their own. It is the business of towns and cities to draw from the largest possible area, with the result that townships near these centres are unduly taxed. The larger the city, the greater the attraction and the greater the burden imposed upon the different townships in the area within which an influence is exerted upon traffic.

The smaller cities exert an influence in the particular section surrounding them, in many cases extending over a half a dozen counties. But being distributed over the province they make up an influence similar to the larger centres of population. Separated from counties, however, and without representation in county council, they are all free from any form of taxation for rural roads.

This influence is not confined to an area immediately surrounding the city, where vehicles are used entirely in response to that direct influence; but the goods, the