

## Engineering Department

A. W. CAMPBELL,  
O.L.S., C.E., M.C.S., C.E.

### Street and Road Improvement.

Evidence of the activity in the movement for better roads is everywhere apparent, and the work which is this year being done in the villages, towns and cities of Ontario is simply surprising. That this young country should so readily awaken to the benefits of such improvement is due to the superior intelligence of the people. That they should be in a position to so speedily organize to carry out this work, clearly demonstrates the perfection of our municipal system. And further, it illustrates how closely municipal authorities are studying the principles of economy in administering the affairs entrusted to them by the citizens.

These splendid streets and sidewalks are not the result of a new discovery, nor are they being obtained in response to an extravagant clamor for something more pretentious. They are the outcome of changed conditions and a careful consideration of existing methods, which have not kept pace with other developments. From the very founding of these places the necessity for streets and sidewalks has been appreciated. They have been made out of such materials as could be most readily obtained and utilized in the least expensive way to serve existing needs. A single plank walk and a little grading of the roadway at first sufficed, and with the growth of the place these were improved to meet the demand. The single plank was doubled, multiplied or otherwise laid and extended. Sidewalks grew so much in popular favor that to day they must lead to every urban home.

As with sidewalks, so also with streets or roadways, they were commenced in a very primitive way, rude ditches were made to carry away the water and the soil cast in the centre to make the grade or crown. Over this, later on, was scattered gravel, broken stone, brick-bats and other coarse material in an attempt to stiffen the surface and form a crust to carry the wheels. And in the vain hope of accomplishing this object, repeated applications of these materials were made only to be swallowed up in their turn. This practice forms the greatest portion of the history of roadmaking in parts of this country for upwards of a century, and, unfortunately, still holds in some sections where better should be expected. Much unprofitable speculation has been undertaken with other materials and the most perfect asphalt pavement in our cities is but the result of the evolution. Our streets are not bad because we have not contributed money for their improvement, as a careful examination of our municipal expenditures will show, but because we have been following largely the primitive methods of those who only adopted them as a temporary expedient.

That we should have so persistently followed these plans without examining their merits or interpreting the reasons for their adoption does those pioneers an injustice and discredits our progressive-ness.

The present agitation for better streets has clearly revealed these things. It has shown that these primitive and faulty methods are incapable of producing good results.

That so long as they are followed only temporary work can be expected.

That temporary work on streets and sidewalks is never satisfactory, but the outlay is continual.

That durable work in a term of years is no more costly, and maintenance is reduced to a minimum.

That there are principles in street construction which must be observed if good results are to be expected.

That good results on streets can only be secured from good material and careful workmanship.

That plank sidewalks are perishable, their life is only about ten years, during the last five of which repairs are required,

That the cost of artificial stone walks is about twice that of plank and should last fifty years without repair.

That proper implements are as necessary in building a good street as in building any other work. That modern implements are essential to making streets quickly, profitably and cheaply.

That the work of streets and sidewalks should be carefully planned according to the requirements, having due regard for expansion of traffic within a reasonable time, and that the cost of the work should be consistent with the traffic.

### Road Reform a National Question.

President McKinley in his last message to Congress, directs attention to the road question, as follows: "There is a widespread interest in the improvement of our public highway at the present time, and the Department of Agriculture is co-operating with the people in each locality in making the best possible roads from local material and in experimenting with steel tracks."

These are the first words directed to Congress by any president, since railroads came as a rapid transit necessity, to meet the growing demands of travel and commerce.

A few months later, as a ringing supplement to the President's message, an appeal comes to all the people from the Republican National Convention at Philadelphia, which is destined to have far greater influence and create deeper interest in road improvement, than any action ever taken any by political party in this country. It is the first time a great

national political party has incorporated a Good Roads Plank in its national platform. It is therefore a great victory. Strong efforts were made to have the Democratic Convention incorporate a section for Good Roads in its platform, at Kansas City, but they failed. We therefore feel fully justified, in giving the republican party the highest credit for its action taken at Philadelphia. The following resolution was unanimously made a part of the platform.

"Public movements looking to a permanent improvement of the roads and highways of the country, meet with our cordial approval and we recommend this subject to the earnest consideration of the people and of the legislatures of the several states."—*The State's Duty.*

### The Smoke Nuisance.

The commissioners of the Brockville Waterworks Department have issued their first printed report, which includes tabulated statements of revenue, expenditure, and expansion for the seven years prior to Oct. 31st, 1899. This report is an excellent one and will be of value to all who are interested in municipal problems. One matter to which reference is made, the smoke nuisance, exhibits an enterprize that deserves the attention of many cities where the ill effects of smoke are more severely felt than in Brockville. The commissioners say:

"We have been extremely anxious to abate the quantity of soot and smoke discharged from the chimney of the boiler house. This, as we well know, is very disagreeable and unpleasant for those residents who reside in close proximity to the works. With that end in view we have made a thorough inspection of various smoke consuming apparatus which are in operation in different places in Canada and the United States. As yet we have not found one which is entirely a success, although some of them greatly lessen the smoke emitted from the chimney. Last year this board was about to introduce a system of smokeless stokers, but deferred doing so in the hope that the Brockville Peat Co. would be able to furnish us with a class of fuel which would make no smoke and thereby relieve us of the necessity of going to any extra expense in order to consume it. However, this board fully realizes the offensiveness of the smoke, and before another year expires if we cannot procure some fuel which is smokeless or nearly so, which we are now endeavoring to do, we will be obliged to procure some mechanical means of getting rid of the smoke."

The council of the township of King passed a by-law at a recent meeting, providing for the payment of a bounty of \$4 to any resident of the township, other than the owner of the offending canine, for the destruction of any dog caught in the act of killing or worrying any sheep or lambs within the municipality.