

it, as if too narrow for the mower it becomes difficult to keep the grass cut.

On business streets the matter is one of choosing between two evils. In this case the entire street allowance is paved either for sidewalk or roadway, there is no boulevard, and it is necessary that the poles should be in either one or the other. On the sidewalk they narrow the walk at regular intervals, by the diameter of the pole at least. On the roadway they interfere with the use of a roller, and necessitate the placing of the gutter outside of the poles, cobble stone being used to pave the gutter and edge next the walk. In the roadway therefore, the poles add to the difficulty of rolling, they add to the cost of construction by the amount necessary for cobble-stoning and forming the gutter, and narrow the roadway not merely at the points where the poles are placed, as in the case of the walks, but throughout the entire length of the road, as it is necessary to keep the gutter straight. The appearance of a gutter cobble-stoned in this way, is not equal to one formed merely by the angle of the curb and surface of the road. A gutter of cobble-stone is more difficult to keep in repair, and set out from the walk a distance equal to the diameter of the telegraph poles, vehicles cannot so conveniently drive close to the curb. In points then of less expense, less obstruction to traffic, and better appearance, which are the main factors in the case, the balance is in favor of placing telephone poles in the sidewalks rather than in the roadway, and this we find is the customary practice.

Tar Macadam Pavement.

Tar macadam roadways are very commonly used in England, but in Canada and indeed the United States as well, they have very rarely been adopted, Hamilton is the only Ontario city, probably the only city on this continent which has made general use of this method of paving, and it appears to be growing in favor there.

It is found to be less pervious to moisture than ordinary macadam, less noisy, less muddy, less dusty. The cost of watering and scavenging is less but it must be regarded as a good substitute merely for ordinary macadam. In Leicester, England, it is called "silent macadam". To sum up its merits as compared with ordinary macadam it is slightly cleaner and more sanitary.

The precise methods of laying tar macadam paving, vary somewhat in different cities, according to local circumstances. The main features require that the street be first excavated, graded, under-drained and rolled as for any other pavement. On this a layer of broken stone is spread and thoroughly rolled, the thickness being from four to six inches after rolling. On this spread a coating composed of crushed stone and tar, two to four inches thick, the stone and tar having

been heated separately, then thoroughly mixed before being laid. This should be rolled down into a solid mass, after which the road may be surfaced with an inch coating of mixed tar and gravel, rolled smooth. Some pitch is added to the tar; and in English practice, a quantity of creosote is sometimes added as well. It is recommended that this work should be done in spring or fall, although dry weather is essential. If done in summer, the heat of the sun drives the tar out of the pavement.

The pavement is therefore made up as follows:

1. Earth sub-soil, excavated, under-drained and rolled.
2. Ordinary broken stone, four to six inch layer.
3. Mixture of tar and broken stone, two to four-inch layer.
4. Mixture of tar and fine gravel, one inch layer.

Care and experience are necessary in laying this pavement, as poor workmanship or defective material will result in a pavement that has a tendency to become soft and yielding in hot weather.

The cost of a piece of finished road in Hamilton, of about 368 square yards, was 76 cents a yard, made up as follows:

Labor, mixing and heating stone.	\$32 64
Removing cedar blocks, grading.	95 37
Rolling	7 33
Stone for bottom	22 50
Broken stone	55 00
Screenings	10 00
Gravel	3 00
Wood for heater	5 00
Tar	49 00
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	\$279 84

This, it will be seen, was for a short section of street which had been block-paved. The cost of grading was, therefore, not so much for a street which had not been previously graded. Nor does this include the cost of curbing. The annual cost of repairs is said to be less for tar macadam than for ordinary macadam.

Statute Labor Its Own Defence.

Statute labor among those who understand the road question, as it presents itself in this province, needs no defenders. Statute labor has done an immeasurable amount of good. Had it not been for that system, as a means of uniting the efforts of the pioneer settlers of Ontario, the roads would have been in a far less satisfactory state than we find them in to-day. When one considers the condition of this province but a century ago, at the time of the first settlement, the advance that has been made is startling, and road-building has, in many sections, kept pace with progress in other respects. As a means of clearing the road allowance of trees and stumps, grading and shaping the roadway, no better means could have been adopted than the statute labor system.

Statute labor, as we have said, needs

no defenders. The greatest enemy of the system is the man who believes it his duty to rise to its defence under any and every circumstance. The greatest wrong which can be done to the system, is the action of some in thus clinging to it, seeking to prolong its use to any period, and to work with which it is not and cannot be expected to cope. No one attempts to advocate statute labor for cities nor for towns. In many townships, while there are many of the old standard-bearers of statute labor still on the farms, ready and willing to do their share of roadwork, yet the rising generation are becoming accustomed to other more modern ideas. The self-binder has displaced the rake and cradle, the threshing machine has driven the flail out of use, and precisely in the same way, statute labor, for reasons difficult to define, has lost its old-time power for good in many localities. It is well when the friends of the system recognize this fact, and turn their efforts in the direction which will act harmoniously with present and growing needs.

On Pavements.

Many people suppose that cedar block pavement has fallen into general disfavor. Ontarians have formed this opinion because of the specimens of this pavement seen in Toronto. When cedar is properly laid on a concrete foundation it makes a very fair pavement, its cheapness being acceptable to property owners who cannot afford vitrified brick or asphalt.

According to the *Tribune* the city of Chicago has just contracted for 3,209,398 square yards of pavement, or 79.28 miles to be laid this year, at a total cost of \$2,118,463, as against 824,047 square yards, or 49.24 miles, at a cost of \$1,472,000 in 1899. It is interesting to note that the city of Chicago favors macadam very highly. In this year's contracts there are 25.51 miles of macadam, 18.38 miles of brick, 17.95 miles of asphalt, 12.26 miles of cedar, and 3.56 miles of granite. The yielding soil of Chicago, the city having been built on the muddy banks of Lake Michigan, makes road-building a matter of difficulty and it operates especially against cedar block. Nevertheless, after an experience of twenty years with that paving citizens and council still favor it. But the fact that macadam is so popular in Chicago should be gratifying. We cannot think of cedar block, vitrified brick or asphalt while the material for macadam roadways can be had within the limits of the corporation for practically the cost of cartage. What we want is not a few streets well paved, but all our roadways put in such a shape as to challenge the admiration of visitors. To that end the municipality should work while there is a street to grade or a cord of limestone available for road construction.—Galt Reporter.

A by-law to grant a bonus of \$21,000 to the Port Dover-Berlin-Goderich Railway recently carried in Berlin by 522 majority.