

# MUNICIPAL DEPARTMENT

## BRICK FOR PAVEMENTS.

The report of the committee appointed by the City Council of Toronto to visit the American Society of Mutual Improvements at Chicago has been prepared.

From the discussion it was gathered that the sense of the meeting was that the specifications respecting the repair of asphalt pavements should be rigidly drawn; that paving bricks should be tested, and the laying of them on concrete foundation was most favored; that wood pavements are not favored, and the breaking up of or the making of openings in the streets for any purpose other than by civic officials was condemned.

At Chicago the delegation made the acquaintance of a new asphalt, known as the "Assyrian lime rock," from the Wasach Mountains of the State of Utah. This pavement, which has been laid on Southpark avenue for a distance of one mile, has been in use about two months, and is in excellent condition. A combined curb and gutter of Portland cement concrete is also in use upon this street, the cost, completed and finished, being 75 cents per lineal foot.

An experiment on Michigan avenue was tried some two years ago by paving several blocks with vitrified brick and square white pine blocks. The bricks on concrete with sand filling have worn well, but the blocks are decaying and wearing.

The opinion of the Detroit officials is in favor of cedar on concrete on streets where traffic is not heavy; it is reasonable in cost, easily and cheaply repaired, and practically noiseless, but it is not so easily cleaned as brick or asphalt. Brick pavements are smooth, easily cleaned, adapted alike to light and heavy traffic, of minimum cost, and although objectionable on account of noise, perhaps are the best all round pavements in use in that city to-day, although they say a sufficient length of time in which to determine their durability has not elapsed since their introduction, as brick has only been used by them as a paving material since 1890, the greater part of the pavements having been laid during 1895-6.

City Engineer Keating went on an independent tour of inspection to Indianapolis, Columbus, Cincinnati, Cleveland and Buffalo. From the notes taken by him the following comparative statement of the mileage of asphalt, brick and wooden pavements is compiled:

	Asphalt.	Brick.	Wood.
Indianapolis....	33	20	6
Cincinnati.....	20	35	1
Columbus, O....	15	80	0
Cleveland.....	5	32	0
Buffalo.....	197	5	0
Detroit.....	19	15	175

At Indianapolis, Cincinnati, and Buf-

falo the bricks are laid on concrete foundation; at Columbus, Ohio, 3 inches of gravel, and at Cleveland a similar depth of sand forms the foundation. Cleveland, owing to the cheap foundation, composed of sand thoroughly rolled with a six-ton roller, is able to construct a good brick pavement at an average cost of \$1.08 per square yard, and in some instances 90 cents has been the cost. From this city comes the report that wooden pavements have been abandoned. The oldest brick pavement in Cleveland has been down seven years, and is in good condition. At Columbus, where a foundation of broken stone is used, the brick pavement is reported, after eleven years' trial, as "in pretty good condition." The further information is offered that the traffic on it is not heavy. The cost of this pavement is reported at \$1.15 per square yard.

In connection with the test to which paving brick is subjected, it is reported that the percentage of abrasion allowed in those cities where this test is made varies from 20 to 30 per cent. The average percentage of absorption accepted by Buffalo is three per cent. The cost of brick delivered on the street varies from \$10 to \$14 per thousand, and the period of guarantee for the pavement from three to five years, the latter being the most general.

## TIRES.\*

It is not only necessary to make good roads; it is also necessary that they shall remain good. For this reason all European countries advanced in road-making have laws regulating the width of tires used on wagons, carts and vehicles for heavy draught.

In France the width of tires ranges from three to ten inches, usually from four to six. Every market wagon and tonnage wagon is a roller; the forward axle is about fourteen inches shorter than the rear axle, so that the hind wheels run in a line outside the level rolled by the fore wheel.

In Germany, wagons used for drawing earth, brick, stone and similarly heavy loads must have a width of tire at least four inches.

In Austria all wagons built to carry a load of more than two and one-quarter tons must have tires at least four and one-third inches in width. In lower Austria a rim of four and one-half inches is required for wagons drawn by two horses.

In the State of Michigan persons using wide tires receive a rebate of one-fourth their road-tax. The States of New York, California, Ohio, Indiana, Kentucky, Vermont, Pennsylvania, Massachusetts and Connecticut have laws pertaining to the width of tires.

Experience goes to show that broad tires are very much to be preferred for drawing loads through fields and on farm roads, as they sink less deeply into the soft earth and employ less draught to move them. On rough, rutted roads, the

advantage is slightly in favor of the narrow tire in point of draught, but when wide tires are used by all there will be no rutted roads. One farmer using tires as narrow as four inches says that in the spring time he has only to drive up and down his lane a few times to change it into a smooth, level driveway. Those who will observe the occasional wide track made on our country roads will understand this result.

Towns and cities are no less affected by narrow tires than are rural districts, and it is little short of absurd that property owners should go to the expense of laying expensive pavements while those most benefitted by them continue to destroy them with narrow tires. Coal carts, drays, tonnage and express wagons on narrow tires should soon become a thing of the past. The city of Ottawa has recently adopted a wide tire by-law, and this example it is to be hoped will soon be followed by others.

To understand the evil effects of narrow tires one has only to observe an empty, springless wagon jolting along the highway, or a loaded wagon ploughing its way through the crust of a gravel road in fall or spring. At all times narrow tires on wagons of heavy draught are the greatest destroyers of roadways. To get the most benefit from the statute labor and other road expenditure in the province, to lessen the cost of roadmaking and maintenance, narrow tires must be discarded by those engaged in heavy teaming on our roads.

Broad tires, on the contrary, are in a way a benefit rather than a detriment to roads. Their broad surfaces perform the work of rollers in keeping a smooth and compact roadway free from ruts. Wide tires more than any other means that can be adopted, distribute wear over the surface of the road. Narrow tires do the work of a pick on a roadway, while broad tires do the work of a pounder. The one tears up, the other consolidates.

## LEGAL DECISIONS AFFECTING MUNICIPALITIES.

CARON et al. vs. THE CITY OF ST. HENRI.—In this case the defendant had been condemned by the court below in damages for an accident which occurred in consequence of the breaking of a wire belonging to the city's fire alarm system. The wire in breaking had fallen across the electric light wire immediately below, and became charged with the current. The husband of the plaintiff, seeing the broken wire laying on the street, had attempted to roll it round a pole. He rolled up one end without suffering any injury, and then proceeded to roll up the other end, but this portion of the wire having become charged with the current from the electric light wire, the result was that he was killed by the shock. The question was as to the negligence of the city, defendant. The court below held that there was sufficient proof of negligence in the fact that the city had notice that a break had occurred in its system more than twelve hours before the accident, and had not used diligence in discovering where the break occurred; and, further, that it had received notice by telephone of the spot where the break occurred, about an hour before the accident. The Court of Review maintained this judgment, the damages allowed being \$750 to the mother, and \$750 to the minor child.

\* From Bulletin No. 2, issued by the Provincial Road Instructor for Ontario.