

MUNICIPAL DEPARTMENT

BRICK PAVEMENTS IN TORONTO.

Brick pavements seem to be increasing in popularity with the Toronto public, according to the last annual report of Mr. C. H. Rust, Deputy City Engineer, which contains some important data concerning them. They were first laid in 1895, on two residential streets; in 1897 four streets were so paved. The foundation is 4 inches of concrete with 1-inch sand cushion over it, and the joints are Portland cement grout except in one case, where paving pitch was used. A lane was also paved with brick on 6 inches of gravel during last year. All this work was done on the petition of abutting taxpayers, and petitions for more like it have been received. All the brick used in 1897 was made in Canada, and most of it was repressed and level-edged. It was subjected to abrasion and absorption tests before being accepted.

For the abrasion test three bricks of known weight were placed in a cast-iron cylinder 2 feet in diameter and 3 feet long, together with about 140 pounds of scrap iron varying in weight from about 10 ounces to 11 pounds, the average piece weighing about 3 pounds. The cylinder was then given 2,000 revolutions at the rate of 29 revolutions per minute, after which the bricks were taken out and weighed. They were then given another 2,000 revolutions and again weighed. If their loss was greater than 8 per cent. of their first weight after 2,000 revolutions, and 13 per cent. after 4,000 revolutions, the brick represented by the samples were rejected. The test has not been altogether satisfactory, owing to the pieces of iron becoming very much worn and the difficulty of determining exactly what the cylinder contained. Iron cubes were cast with corners rounded to a radius of about a quarter of an inch. They weighed 2, 4 and 8 pounds, and were used as a substitute for the scrap iron, but the largest two sizes were found too severe on the bricks and their use was discontinued. The abrasion test now in use is to put three samples in the cylinder with 100 2-pound round-edged iron cubes, and give them 3,000 revolutions at the rate of 25 revolutions per minute, their weight being taken at each 1,500. Those which lose more than 8 per cent. of their weight during 1,500 revolutions or 12 per cent. during 3,000 are rejected.

The absorption test, which formerly took three days, has been reduced to six hours by taking a small piece weighing from about 2 to 4 ounces from the inside of one of the sample bricks. This piece is first thoroughly dried, then weighed, and next immersed in water for six hours. At the end of this period it is dried with a cloth and weighed again. If the gain in

weight is over 2 per cent. the brick is rejected.

UTILIZING GARBAGE.

The garbage of a great city is too often regarded as worthless. In St. Louis, Missouri, the refuse is placed in enormous vertical cylinders, surrounded by steam jackets, which evaporate the seventy-five to eighty per cent. of water in the garbage. The fatty substances are dissolved, and as the result of a number of processes a fertilizer is produced which is worth from nine dollars to twelve dollars per ton, the demand exceeding the supply. One of the purest and best soaps of the country was made of garbage grease before cottonseed oil entered the field. It is now proposed to light London by electricity for nothing. It now costs that city \$1.08 (4s. 8d.) to get rid of a ton of garbage. A combination of boilers and other apparatus has been devised that can burn the garbage at twenty-four cents (one shilling) per ton, and generate steam sufficient to run enough dynamos to light the entire city. London can thus save 3s. 8d. on each ton, and, in addition, illuminate its city without cost. Garbage, by a machine called the "dust destructor," is converted into clinkers, which can be used for roadways, as artificial stone for sidewalks, and as sand for mortar and cement. In Paris the invisible particles of iron, worn from wheels and from the shoes of horses, are rescued by passing powerful magnets through the sweepings.

In the city of New York the street cleaning department is under the able management of Colonel Waring, and during the year 1897 the death rate of that city was lower than it has been since a record of it was kept. Under the present municipal regulations, ashes and garbage are collected separately in New York, and the garbage is mainly disposed of at the works of the Sanitary Utilization Company on Barren Island. The ashes and cinders are, at present, thrown into the sea, but the Commissioner proposes a much more rational way of disposing of them, which is not only interesting, but novel. Analyzing the contents of the New York ash-barrels, Col. Waring finds that they include, on an average, twenty per cent. of recoverable coal, fifty per cent. of fine ash, and thirty per cent. of coarse ash, clinker and stone. Twelve hundred thousand cubic yards of ashes are collected in New York every year, at a cost of six hundred and forty thousand dollars. The

cost of separating this into its component parts, ready for utilization, would be about one hundred and fifty thousand dollars, which must be added to the cost of collection. The result of separation would be, however, to furnish on the city's premises, ready for sale, one hundred and forty-four thousand tons of coal, which, at two dollars and a half a ton, would be worth three hundred and sixty thousand dollars; six hundred thousand cubic yards of fine ashes, worth, at twenty-eight cents per yard, one hundred and sixty-eight thousand dollars; and one hundred and eighty thousand yards of clinker, worth, at seventy-five cents a yard, presumably for concrete work, one hundred and thirty-five thousand dollars; the total value, at these prices, being six hundred and sixty-three thousand dollars. Adding the cost of separation to that of collection, the city would thus save five hundred and thirteen thousand dollars a year. The American Architect asks how fine ashes could be sold, even at so low a price as twenty-eight cents a yard, but Colonel Waring points out that ashes, mixed with lime, make a mortar stronger and lighter than lime and sand, and that the dealers who manufacture the machine-mixed mortar, now almost universally used by builders in New York, would probably be glad, if the substitute could be legalized under the building acts, to take and use a material which would enable them to supply a mortar, as good as their present product, at less than two-thirds the price.

If the ashes and garbage can be so profitably utilized in New York, there seems no reason why some use could not be made of these materials in other cities.

London is said to be the healthiest city in the world of its size. Then it is easy to be remembered that there is no other city of the same size as London. The numerous hospitals are evidence of the great prevalence of disease within its borders and the activity of the coffin makers and undertakers is well known when the fogs come on. Some interesting figures have recently been given showing the cases treated at the voluntary hospitals and dispensaries of London and also at the hospitals of the Metropolitan Asylums Board. They amounted together to the total of 1,753,611 patients.

Send for a copy of the CANADIAN CONTRACTOR'S HAND-BOOK. Price \$1.50; to subscribers \$1.

CHARLES HUGHES - Milton West, Ont.

All Kinds of Municipal Work

CURBING, CROSSING, CHANNELLING, FLAGGING, ETC.

Rough Heavy Lime-stone for Breakwater Cribbing, Etc.

Credit Valley Grey Dimension, any size, Sills, Steps, Coursing, Bridge Blocks, Engine Beds.

— Estimates Given for All Kinds of Cut Work —

BELLHOUSE, DILLON & CO., 30 St. Francois Xavier St., Montreal
Sole Agents for the Compagnie Generale des Asphaltes de Franco (Rock Asphalt).

PORTLAND CEMENT NORTH'S CONDOR

Paving and Fire Brick a Specialty

SITTING LION and WHITE CROSS Brands

NORTH'S "CONDOR" BRAND AWARDED FIRST PRIZE AND GOLD MEDAL AT THE ANTWERP EXHIBITION