

MUNICIPAL DEPARTMENT

PROPORTIONS OF CONCRETE.

The proportions of concrete are discussed in a brief article by Mr. G. J. Morrison in the last "Proceedings" of the Institution of Civil Engineers. He says: Decide tentatively on the quantity of large and small stones, if necessary trying two or three proportions. Add sand by degrees till the mixture, after being well turned over and shaken down, shows a decided increase in bulk, at least 5 per cent., then add cement to an amount equal to between one-third and one-half of the sand. Then, taking the amount of cement as unity, a specification can be drawn accordingly. Within these limits all concrete will be strong and solid, and the mixture of stones which requires the least sand will be the most economical. For many purposes cement equal to one-third of the sand is sufficient, but an increase in quantity up to one-half will give a concrete stronger and more impervious to water. If, however, it is attempted to improve a fairly good concrete, made with a ratio of sand to cement of 3 to 1, by reducing the sand it will probably be ruined; on the other hand, concrete that is honeycombed may often be improved by the addition of sand or gravel, that is to say, a well-proportioned so called 8 to 1 may be better than a badly proportioned so called 7 to 1. It need hardly be stated that if gravel be used containing sand, the sand must be separated for the experimental mixture, and the specification modified accordingly; but while the specification provides the basis of a contract, or a basis on which the particular work is to be carried out, a description giving the proportions of various sized stones and sand, and the increase of bulk by the addition of each constituent to the first lot of large stone (for each addition should give an increase and not be entirely lost in the voids,) is necessary as a guide for other works."

LEGAL DECISIONS AFFECTING MUNICIPALITIES.

The corporation of the village of Granby, Que., has obtained an important decision in the Supreme Court at Ottawa. Two years ago a man while working in a sewer was killed in a cave in. The widow brought suit for \$5,000 damages. The action was dismissed by Judge Lynch in the Superior Court at Sweetsburg. This judgment was reversed by the Court of Appeal, which gave \$3,000 damages and costs. The latter decision has just been reversed by the Supreme Court, which sustains Judge Lynch's judgment in the court of first instance. Including costs the amount involved is about \$5,000.

BROCKVILLE DEBENTURES.

In 1895 the town of Brockville, Ont., issued debentures amounting to \$30,008, the proceeds to be applied to extending and improving the water-works system. Of these \$16,000 were sold shortly after being issued. The balance, \$14,000 were sold last week to G. A. Stimson & Co., of Toronto, at 103.93, or \$551 premium, without accrued interest. The debentures bear 4½ per cent. They were issued for 30 years, so those sold last week have about 25 years to run. The price for the last lot is higher than was received for those sold in 1895, and is said to be the best sale ever made of Brockville bonds.

NOTES.

Mr. W. S. Cranston has been appointed assistant city engineer of Ottawa, Ont.

Mr. John G. Dykes, who held the position of town clerk of Galt, Ont., from 1868 to 1893, died in that city recently.

Thirty-six municipalities in Ontario have already decided in favor of abolishing statute labor, and a number of other townships will vote upon the question at the coming municipal elections in January.

The corporation of Lachine, Que., has owned and operated its own electric lighting plant for seven years past. Recently, however, it became dissatisfied with this method, and, after having consulted with Mr. R. A. Ross, consulting electrical engineer, decided to dispose of the plant and accept the offer of the Lachine

Rapids Hydraulic & Land Company for the necessary supply of current, which will be delivered at the transformer primaries.

The total membership in the American Society of Mechanical Engineers, according to a statement recently issued by Secretary Hutton, is 2,064 members in all grades, this representing a net gain of 113 members since January. It is the largest net increase for any half-year in the history of the society, being nearly twice as large as the corresponding increase last year and nearly one-third larger than for any six months in the history of the society. The winter meeting will take place in New York December 4 to 7.

A street cleaning machine has recently been tested in New York which contains many features of interest. It is drawn by a couple of horses and performs all the functions of a street cleaning gang, except scraping the roadway with the rubber squeegees which are used on asphalt. A revolving broom sweeps the dirt to a conveyor lifting it into a covered bin. Just in front of the broom there is a horizontal pipe through which jets of water are sprayed on the street so as to prevent dust. The dirt collected in the bin is distributed uniformly through it by means of a scraper, and when the bin is filled it can be discharged into a cart or onto the ground in a heap by letting down a door and scraping the contents out by a very simple form of conveyor. The water is carried in a tank below the bin.

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