MUNICIPAL DEPARTMENT

SEWER VENTILATION.

Editor CONTRACT RECORD.

SIR,—The necessity for the more thorough ventilation of our sewers being admitted, there still remains the question of how it may best be accomplished. During outbreaks of diphtheria and similar diseases it seems imperative that something be done with the utmost speed, but before the municipal machinery can be set in motion, the disease dies out or the afflicted ones die; the public outcry ceases, and the public servants relapse into the old routine. Possibly if some definite system had become recognized as the one correct thing to be done, it might be proceeded with in the ordinary course, but in the absence of such authority there is room for many theories and speculations. The inventors of improvements hope to profit by their introduction; several schemes, more or less costly, have been proposed, and there are more to follow, all having public expenditure and private gain as the prime object.

Before being led into such experiments would it not be prudent, by rectifying one error, to perfect our otherwise excellent plumbing by-law? Toronto was one of the first cities to introduce the approved modern sanitary system, with licensed plumbers and all-powerful inspectors, quickly educating us up to as good workmanship as can be found in the world. There was just one oversight in passing our by-law, which has been remedied by all other cities in their more recent legislation, that was the retaining of the main trap on the private drain. Under the old slipshod method this trap was a necessary safeguard to the home, but with the back-vent or "break-syphon" and perfect workmanship, it is not only no longer necessary, but is an actual disadvantage to the sewer system in closing off all chance for the escape of the gases continually forming therein. True, a later and minor clause in our by-law permits the omission of the trap in the case of iron drain being used under the building, but the by-law properly calls for the trap and fresh-air inlet, and in our conservatism the old method is usually followed, "ours not to reason why." In the recent by-laws of all other cities the use of the trap is specially prohibited.

Though iron is certainly the best house drain, in the use of tile, where properly laid and tested, there could be no danger when the sewer gas has ample escape, as herein proposed, before becoming congested and putrid.

The outlets of our main sewers being under the water of the bay, the only openings are the few and very small manhole gratings. This is not enough for any admixture or dilution with fresh air, and the gases that ought to pass off readily while harmless, are held in confinement and become dangerous. The tendency is to rise to the higher levels, where the constantly increasing pressure forces them out through the gratings into the up-town streets, in what should be our best residential neighborhoods.

The simplest remedy for this is to take out and leave out the main trap, so that the many thousands of soil-pipes may all do their share, and a part of their proper office, in permitting the rapid escape of sewer gas and its dilution with fresh air, which would then be sucked down through the street gratings.

The current through them would thus be reversed, and the danger and nuisance abolished. The soil-pipes being in the buildings, in our climate, are warmed, and the current of air through them would usually be upward, but whether up or down, would be equally safe. The pressure being relieved, and the gases being diluted with a constant stream of fresh air, sewer gas would cease to be a menace or bugbear.

The terrible microbe we may not hope to entirely escape, but we may expect to inhale a lesser number in pure air or diluted gas than in a lung full of the vile exhalations from the street grating in front of our parlor window, under our present system.

This proposed change would cost the city nothing, and in new work would effect a saving, though how the ornamental fresh air inlet bend would be missed!

Is there any power in the city sufficient to cause the change in by-law, or can any influence cause a change of heart in the inflexible inspector who has so valiantly upheld the infallibility of the present system?

M. B. A.

Sewage purification by the ferrozone and polarite process has been tried at Boulogne, France. According to Engineering, the plant was somewhat handicapped by the fact that the supply of sewage was very intermittent and had to be stored in a tank before purification. Below the storage tank were placed two smallar tanks, in one of which the precipitation by ferrozone was effected, while the other formed a reservoir for the decanted liquid before it passed to the polarite filter. From a chemical examination of the effluent from the filter, Mr. L. Vanflart, chief chemist of the departmental laboratory of Boulogne-sur-Mer, concludes that the plant removes 84 to 88 per cent. of the organic matter present in the raw sewage, the effluent remaining clear and odorless for 15 days. A bacterial examination by Dr. Billet, showed that when the original sewage contained 5,250,00 bacteria per cubic centimeter, the liquid decanted after treatment with ferrozone contained 812,500 bacteria and the effluent from the polarite filter 42,000 or less than 1 per cent. of those originally present.

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WIDE TIRE EXPERIMENTS.

A wide tire test was made at the Ohio State University with the following result: An ordinary wagon with a new 3 inch tire was loaded with two long tons, or 4,480 pounds, and the draft was measured by a dynamometer. On an ordinary earth road in good condition and hard the draft was 254 pounds. On a grass field it was 468 pounds. On newly plowed land it was 771 pounds.

As the draft power of an ordinary horse of 1000 pounds is 150 pounds, two horses could draw this load with ease on an ordinary road and a ton and a half on a grass sod, while with a narrow tire half as much, or a single ton, is a full load for a double team Besides this, the broad tires roll and level a road, so that the more it is used the better it becomes, while narrow tires cut it into ruts if at all soft.

LEGAL DECISIONS AFFECTING MUNICIPALITIES.

CHRISTIE V. TOWN OF TORONTO JUNCTION.—Judgment on appeal by town corporation from order of Rose J., varying terms of award between the parties fixing the compensation to be paid by the appellants to David D. Christie for land injuriously affected by the raising of the grades of certain streets in the town, by increasing the amount awarded from $200 to to $1,000, and by giving Christie High Court costs of the arbitration. Hagarty, C.J.O., and Maclennan, J. A., held that the judge, sitting in appeal from the award, had no power under sec. 404 of the Municipal Act to reduce or increase the amount awarded except upon the ordinary legal principles governing the court on appeals or motions to set aside verdicts, and, as in this case, there was abundant evidence to support the award, it should not have been interfered with, and should now be restored. Burton and Osler, JJ.A., were of the contrary opinion, and saw no reason to interfere with the decision of Rose, J. In the result, appeal dismissed with costs.

COLORING STEEL A DEAD BLACK.—For coloring iron and steel a dead black of superior appearance and permanency the right article has long been sought, and, to meet this want, M. Mazuré now proposes a fluid, of which the following is the formula: One part bismuth cloride, two parts mercury bichloride one part copper chloride, six parts hdyrochloric acid, five parts alcohol and fifty parts water, these being of course well mixed. To use this preparation successfully—the article to be [illegible] or bronzed being first made clean and free from grease—it is applied with a swab or brush, or, better still, the object may be dipped into it; the liquid is allowed to dry on the metal, and the latter is then placed in boiling water, the temperature being maintained for half an hour. If, after this the color is not so dark as is desired for the purpose, the operation is simply to be repeated, and the result is in the highest degree satisfactory.

The chief of the Hamilton fire department has published a list of fire losses in that city for years past, and the showing made is that in fifteen years Hamilton has lost by fire $741,000, which is equal to only an average of $49,000 a year. In 1835 the loss was $93,000, in 1881 it was $98,000, in 1893 it was $103,000, while last year it was only $25,922. To the sum last mentioned the fires of July contributed $8,914.