The Canadian Engineer

ESTABLISHED 1893.

ISSUED WEEKLY in the interests of the CIVIL, MECHANICAL, STRUCTURAL, ELECTRICAL. RAILROAD, MARINE AND MINING ENGINEER, THE SURVEYOR, THE MANUFACTURER, AND THE CONTRACTOR.

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Present Terms of Subscription, payable in advance Postpaid to any address in the Postal Union:

One Year \$3.00 (12s.) Six Months \$1.75 (7s.) Three Months \$1.00 (4s.)

Copies Antedating This Issue by More Than One Month, **25** Cents Each. Copies Antedating This Issue by More Than Six Months, **50** Cents Each-ADVERTISING RATES ON APPLICATION.

HEAD OFFICE: 62 Church Street, and Court Street, Toronto, Ont. Telephone Main 7404, 7405 or 7406, branch exchange connecting all departments. Cable Address: "ENGINEER, Toronto."

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Address all communications to the Company and not to individuals.

Everything affecting the editorial department should be directed to the Editor.

The Canadian Engineer absorbed The Canadian Cement and Concrete Review in 1910.

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Changes of advertisement copy should reach the Head Office two weeks before the date of publication, except in cases where proofs are to be submitted, for which the necessary extra time should be allowed.

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Printed at the Office of The Monetary Times Printing Company. Limited, Toronto, Canada.

Vol 23	TORONTO,	CANADA,	AUGUST	8,	1912.	No.	6
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THE BLOOR STREET VIADUCT.

The following is extracted from a report by Commissioner of Works Harris, of the city of Toronto, to the Board of Control on the proposed Bloor Street viaduct :-

"We are making a thorough survey of the route adopted for the Bloor Street viaduct, and taking the necessary levels and cross-sections, to enable us to prepare plans and specifications for the proposed bridge. I have gone into the matter thoroughly with Mr. C. W. Power, Engineer of Railways and Bridges, who advises me that a concrete bridge would involve minimum maintenance charge, but that other considerations enter into its construction, which renders it inadvisable to use this material. Extensive bridges of this class are, as yet, an experiment, and we do not think that the city of Toronto should make any investment along experimental lines, especially where the issue is so much in doubt. It is found, frequently, in structural concrete, that the slighting of a comparatively small portion of the work destroys the integrity of the whole structure. Concrete bridge design is not well understood, while that of steel is upon an assured basis."

Mr. Harris surely did not desire that the last sentence of the above should be read literally. If he did mean it, we can only say that Mr. Harris has misunderstood what he has been told regarding concrete bridge design. To the question of whether concrete or steel should be used for the Bloor Street viaduct, we have nothing to say. That is a question to be decided on the local conditions-foundations cost, maintenance, suitability, etc. To the statement of Commissioner Harris that "concrete bridge design is not well understood" we must take issue. The analysis of stresses and the knowledge of the action of concrete is to-day on as high a plane as any other branch of structural design. Commissioner Harris is on uncertain ground when his duties compel him to report on work demanding a knowledge of engineering.

WATER STERILIZATION.

In an engineering contemporary the treatment of drinking water by means of violet ray sterilization, in Chicago, is described. The plant is the initial installation for sterilizing water by this means in a commercial way in America, and it is, therefore, interesting to note what results have been obtained. One of the most interesting features of it has been the experience with air. It seems that the water to be treated must be perfectly free from turbidity, either in the form of solid material or in the gaseous state as from liberated air. Erratic results were obtained with a perfectly clear water until the experimenters one day noticed through the peek-hole of the lamp that the water in the sterilizer appeared cloudy to the eye, although the final product was crystal clear. The installation of a tank to eliminate the air solved this problem. In an 111/2-in. diameter sterilizer the proper position for the lamp was found to be 21/2 in. from the surface. The brilliancy given to water by treatment with aluminum sulphate seems to be particularly advantageous in permitting the rays to penetrate the water.

There is some evidence to indicate that violet rays kill spores as well as vegetative bacteria. Ordinarily,