

The Canadian Engineer

Established 1893

A Weekly Paper for Civil Engineers and Contractors

Terms of Subscription, postpaid to any address:

One Year	Six Months	Three Months	Single Copies
\$3.00	\$1.75	\$1.00	10c.

Published every Thursday by

The Monetary Times Printing Co. of Canada, Limited

JAMES J. SALMOND
President and General Manager

ALBERT E. JENNINGS
Assistant General Manager

HEAD OFFICE: 62 CHURCH STREET, TORONTO, ONT.

Telephone, Main 7404. Cable Address, "Engineer, Toronto."

Western Canada Office: 1206 McArthur Bldg., Winnipeg. G. W. GOODALL, Mgr.

PRINCIPAL CONTENTS

	PAGE
Canada's Largest Reinforced Concrete Trusses	345
Progress in Lignite Briquetting Scheme	349
Programme for Good Roads Congress	349
Differentia of B. Coli, by Everett Judson	350
Maintenance and Painting of Highway Bridges, by C. D. Snead	351
The Relations Between Engineers and Con- tractors, by John F. O'Rourke	352
Engineers, Laborers and Education, by J. G. Sullivan	353
To Discuss Closed Profession	355
Compound Meters, by F. B. Nelson	355
Rainfall Records, by L. M. Hastings	356
Storing Timber to Prevent Decay	358
Publications Received	359

DIFFERENTIA OF B. COLI

UPON another page of this issue appears a valuable article by Everett Judson, assistant sanitary engineer in the United States Public Health Service, on the "Differentia of B. Coli." It is believed that the method discussed by Mr. Judson is the most promising in differentiating the Colon group and should be thoroughly tried out in practice. However, for those who care to go further into the subject it would be well to consider synthetic media.

Koser proposes a uric acid synthetic medium in which B. Coli fails to develop, while B. Aerogenes produces a dense clouding. The theory is that B. Aerogenes is capable of utilizing the nitrogen of the purin ring, while B. Coli lacks this power and fails to develop, there being no other source of available nitrogen.

Ayers and Rupp have devised a synthetic medium for the direct enumeration of the organisms of the Colon-Aerogenes group. They do not, however, claim that this medium will differentiate between sub-groups of the Colon-Aerogenes group.

METERS AGAIN SHOW BIG SAVING

IN Vancouver the daily consumption of water during the hottest weather last summer was 200 gallons per capita, while Point Grey citizens averaged 35 gallons. Point Grey is metered; Vancouver is not. The cost of Point Grey's meters and of their installation was soon saved if these figures, quoted by a Vancouver newspaper, are correct.

We are a water-wasting nation. No Canadian would hesitate, for example, to flush a toilet three or four times where one or two flushings would suffice for all purposes. Moreover, our plumbing fixtures are extravagant with water. The average Canadian or American flush tank releases

several times as much water at each flushing as does the average European tank.

Cooling the milk by means of running water, neglecting leaky taps and even leaky mains, flooding the lawns unnecessarily, leaving the taps open to prevent freezing,—these are but a few of the many ways in which we daily waste huge quantities of water that has been pumped, filtered and chlorinated at a definite cost per thousand of gallons used. Meters are a good investment. Experience has shown that they do not retard cleanliness, but they do encourage the careful and thrifty use of water. They save capital expenditures in water works plant extensions and lower maintenance and operating charges. Meters will be included—sooner or later—in the conservation programme of every thoughtful municipal engineer.

SOUGHT LEGISLATION 20 YEARS AGO

AT a recent meeting of the Toronto Branch of the Engineering Institute of Canada, Willis Chipman related interesting details of the unsuccessful attempt made 20 years ago by the civil engineers to secure a closed profession. Action was taken in Nova Scotia, Quebec, Ontario and Manitoba. The prairie provinces, as now constituted, were not then organized. In Ontario, the movement was strongly supported by the Toronto Branch of the Canadian Society of Civil Engineers, including such leading engineers as Messrs. Butler, Rust, Keating, Jennings, etc. They personally solicited the interest of members in various centres. A bill was drafted and printed but got no further than the committee. In Nova Scotia, the bill passed the House, but failed to pass the legislative council. In Quebec and in Manitoba the bills passed and became law, and are still on the statutes, but not enforced. In Ontario, the bill was opposed by the mining men, led by Mr. Bell, editor of the Mining Gazette, and Prof. R. Harris, of Kingston. Negotiations were carried on with the Mining Institute, but with no favorable result. The engineers were not united then and are no more united now, declared Mr. Chipman. Many of the engineers present did not agree with this statement, however, and the prevailing sentiment seemed to be that most of the engineers are now united in their ideas regarding the desirability of legislation of some kind.

THE COMMUNITY AND INDUSTRY

INDUSTRIAL difficulties of the past few decades have demonstrated essential differences in the relations between various industries and the public. The tying up of railroad or street railway service or of that of a telephone company results in an obstruction to all classes of business and is most serious.

In the early days of the capitalist system, public sympathy was, generally speaking, with the capitalist; he was supposed to be the only responsible party interested in the dispute, and the law was entirely on his side. It soon became apparent, however, that a combination of workers was not necessarily any more in restraint of trade than a combination of employers, and the right to form unions and to strike was gradually obtained by the labor forces; in other words, it was recognized that there were two parties who had an interest in industrial disputes. With the growth of large scale industry, a third group grew up, the managing class; this group is allied to the wage earners inasmuch as its members themselves work for a fixed remuneration; on the other hand they are allied to the employer because their remuneration depends in large degree upon the success of the undertaking. For the latter reason this group has generally been regarded as being on the side of capital. Meanwhile no consideration was given to the interest of the citizen upon whom in his capacity of consumer the success of any industry is built.

In many industries an industrial war may be carried on until either party is forced to succumb, without causing