

The Canadian Engineer

Established 1893

A Weekly Paper for Canadian 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: 1208 McArthur Bldg., Winnipeg. G. W. GOODALL, Mgr.

Principal Contents of this Issue

	PAGE
Are Good Roads Remunerative to Municipalities? by Col. William D. Sohler	521
Highway Survey Monuments, by Geo. Hogarth.....	523
Some Aspects of Chemical Treatment at St. Louis.....	524
Water Waste, by Edward E. Wall	527
Champlain Dry Dock, Quebec, by Ulric Valiquet	529
Dominion Power Board	535
Recommended Changes in Clay and Cement Sewer Pipe Specifications	536
Reinforced Concrete Ships, by A. Alban H. Scott.....	537
Palmerston Waterworks, by A. E. Davison	538
Preliminary Analysis of the Degree and Nature of Bacterial Removal in Filtration Plants, by A. Wolman	539
Fireproofing Specifications	540
Bombardment of Paris, by R. K. Tomlin, Jr.....	541
Highway Materials Put on Favored List for Cars.....	542
Personals and Obituaries	544

TRADE RESTRICTIONS MAY PROVE BENEFICIAL IN DEVELOPMENT OF NATURAL RESOURCES

TRADE restrictions announced by Canada's War Trade Board will have a salutary effect upon manufacturing conditions in Canada. More raw materials will be worked into marketable commodities instead of being exported to the United States and then imported again as manufactures. As stated by Mr. Edward T. P. Shewen, of St. John, N.B., consulting engineer to the Public Works Department of Canada, in his contribution to the eighth annual report of the Commission of Conservation: "In exporting raw material, a country derives from its natural products the least advantage."

Referring to this aphorism, Mr. C. E. W. Dodwell, of Halifax, in his contribution to the report of the Committee on Conservation presented at the last annual meeting of the Canadian Society of Civil Engineers, says that this enunciation is a flash of genius, entitling Mr. Shewen—until and unless he disclaims originality—to the Nobel prize for the year or the Cordon Bleu of the Academy. "The only proper way in which Canada can ever hope to pay the interest, to say nothing of the principal, of the numerous loans that have been raised to justify and maintain our proud position in the Empire," says Mr. Dodwell, "will be to exploit and develop on sound business principles the almost unlimited natural resources within our borders."

"Take the crudest but most forceful case. A ton of pig iron to-day is worth about \$56; converted into watch springs it is worth nearly \$40,000. In the process of conversion it is increased seven-hundred fold in value. The enormous sum of nearly \$40,000 has been added to its value, this sum representing the difference between its actual and its potential value.

"This is admittedly and purposely an extreme case, but the principle underlies the whole subject. A cord of pulpwood is worth six or seven dollars. Ground into pulp it is worth about \$20; converted into paper, even the cheaper form of wrapping paper, it is worth over \$200. A ton of gypsum is worth a couple of dollars. Calcined and ground, and thus converted into wall plaster, it is worth about \$16, an eight-fold increase."

These are but three of numerous similar examples which could be quoted. In order to grapple vigorously with these and other problems, and to insure proper co-ordination of effort, Mr. Dodwell suggests that a new department of the Federal Government be created. He would call it the Department of National Development, or the Department of Conservation and Development, or the Department of Development and Industry, or the Department of Conservation and Industries. In it he would group and co-ordinate the Commission of Conservation, the Honorary Advisory Council for Scientific and Industrial Research, the Fuel Testing Laboratories, the Forest Products Laboratories and all other government branches or sub-departments which are connected with any feature of development or research. He suggests that the new department be manned by a staff of scientific men and fully equipped with funds for carrying on extensive research work in many branches of scientific industry.

DOMINION POWER BOARD

IN accordance with the resolution passed at the last annual meeting of the Canadian Society of Civil Engineers, the Dominion Government has appointed a Power Board to co-ordinate the development of fuel and power. The government is to be congratulated upon its action. Such a board is necessary to ensure the greatest economical advantage from the use of our national resources.

Few other countries are so fortunate in the advantages accruing from splendidly located water power and coal, and few countries have used such advantages to so great an extent as the people of Canada. During the period of the war, there have been many unfortunate but, it is hoped, temporary difficulties in meeting the urgent demand for fuel for domestic purposes and power for manufacturing. Unless a deliberate attempt be made to have the use of our water powers and our fuel resources co-ordinated, and a policy evolved which will realize such co-ordination in the years to come, the recent difficulties in fuel and power needs will be aggravated. The government has, therefore, taken a wise step in constituting a permanent board for the consideration of problems of such vast importance to all parts of the Dominion.

Cheap power promises to be one of Canada's greatest assets in the post-bellum industrial rivalry of nations for world trade. Our fuel resources, supported by our water powers, should be a sure source of cheap power, and should guarantee Canada her share in world trade, if they are availed of to their maximum possible advantage.

MOBILIZING CANADIAN LABOR

IN mobilizing the nation's full labor power, the government has taken proper action. The times demand deeds, not words. The fate of liberty-loving nations trembles in the balance. Recalling with just pride what her sons have accomplished, fully assured that their courage will meet every test, that their will for