PERSONALS

MAJOR WILLIAM GEORGE TIVAN, of New Westminster, B.C., has been awarded the Croix de Guerre. He is a graduate of the University of Toronto, Faculty of Applied Science, and has served as an engineer with the Light Railway Construction Corps.

ARTHUR EMIL DOUCET, who was recently appointed director of the Public Works Department of the city of Montreal, is a native of that city. Born June 9th, 1860, he was educated at the Royal Military College, Kingston, and started his professional career in 1881 as a rodman on the construction of the Algoma branch of the C. P.R. He was appointed resident engineer of the C.P.R. in 1882 and acted in that capacity during the construction of the Lake Superior-Jackfish Bay line from 1883 to 1885. He was appointed assistant engineer of the Lachine bridge construction in 1886, and the following year was division engineer of the C.P.R. at St. John's, P.Q. Joining the staff of R. G. Reid, contractor for the Algoma & Sault Ste. Marie Railway, Mr. Doucet became chief engineer of construction for that firm, and acted in that capacity from 1887 to 1890 during the construction of the Cape Breton Railway, and for the following eight years during the construction of the Newfoundland Railway. From 1898 to 1900, Mr. Doucet was chief engineer of the Arrowhead & Kootenay Railway, in British Columbia; 1900-4, chief engineer of the Quebec & Lake St. John, Great Northern and Trans-Canada Railways; 1904-8, chief engineer Quebec & Lake St. John Railway; 1904-15, district engineer at Quebec for the National Transcontinental Railway. In 1915 Mr. Doucet entered private practice and was so engaged until July, 1918, when he was appointed adviser to the City Commissioners of Montreal, this step being followed a few weeks ago by his appointment as head of the city's engineering department. Mr. Doucet was responsible for the location of the National Transcontinental from Quebec city to the western boundary of Quebec province, and obtained a maximum grade of 0.4 per cent. He is said to have declined at one time appointment as assistant chief engineer of the Transcontinental. He was a member of the Canadian Society of Civil Engineers since its inception, and is at present a member of the council of the Engineering Institute of Canada. He is a past president of the Quebec branch of that Institute, and of the Royal Military College Club. He was gazetted a Lieutenant of the Mounted Infantry School Corps after qualifying at Kingston. Serving as A.D.C. to his brother-in-law, the late Lt.-Gen. Sir F. D. Middleton during the northwest rebellion, he was seriously wounded, winning a decoration. He was appointed a captain of the Corps of Guides in June, 1906. Capt. Doucet is also president of the Garrison Club at Quebec, and a member of the American Railway Engineers' Association. He was the promoter of the Quebec Transport Co. and the Pacific Pass Coal Fields Ltd., and is vice-president of the Dobell Coal Mines and chairman of the St. Maurice Molybdenite Syndicate, Ltd.

MAJOR DOUGLAS H. C. MASON, D.S.O., B.A.Sc. (1908), University of Toronto, one of the original Third Battalion, has been awarded a bar to his D.S.O.

CAPT. R. Y. CORY, B.A.Sc. (1909), University of Toronto, was one of the heroic Third Battalion that held the line at Langemarck. He was captured by the Germans but has now been repatriated.

PUBLICATIONS RECEIVED

PHILLIPS' HANDBOOK.—New edition of the electrical handbook issued by the Eugene F. Phillips Electrical Works, Ltd., Montreal. 4½" x7", 270 pages and limp leather cover, clearly printed on good quality of coated paper. Complete information is given regarding the wide range of Phillips' products, together with valuable tables regarding the properties of electrical cables, wire, etc. Section 5, consisting of 67 pages, contains general mathematical reference data, well arranged and useful in character. There is also an index to contents. Section 1 covers electrical conductors; Section 2, bare and weatherproof wires and cables, magnet wires and cotton covered wires; Section 3, rubber insulated wires and cables and flexible cords; Section 4, paper insulated power and telephone cables and varnished cambric insulated cables. The handbook is illustrated with a large number of well made halftones.

COMPRESSIVE STRENGTH AND MODULUS OF ELASTICITY OF GUNITE

(Continued from page 116)

It would, therefore, seem that the most advantageous mixtures are 1 to 2½ for work demanding high water resisting qualities and 1 to 3 for ordinary conditions.

Some samples were developed with the use of aggregate ranging up to ½ in., on the assumption that the larger material would show greater strength, as is the case with concrete. As the work progressed, the results showed that here was no advantage and that a well-graded mixture, ¼ in. and under, best satisfied all conditions. As a matter of fact, some excellent results were obtained by using Potomac River sand directly, without any attempt at graduation. This sand was of about the same character as that analyzed above in the report of the Lehigh University, and is what is termed "a good concrete sand."

A study of these results will show that a safe assumption for 1 to 2½ gunite will be 4,500 lb. per square inch ultimate compressive strength, and for 1 to 3 gunite 4,000 lb. per square inch.

In developing the modulus of elasticity, it was not possible to test as many samples as for compression, but the results obtained were highly instructive and beneficial:—

Three prisms were made of 1 to 2 gunite and showed an average modulus at 90 days of 5,417,000 lb.

Two of 1 to 2½ gunite were tested at 90 days and showed an average of 4,670,000 lb.

Eight tests were made on prisms of 1 to 3 gunite with an average result of 4,705,000 lb.

The Winnipeg city council at a meeting last week endorsed the Federal government's proposition to loan money for housing and appointed a committee to draft a report regarding the best way to take advantage of this offer.

Work on the Welland Canal will be continued for the time being on a basis of cost plus eight per cent. No work exceeding $2,000,000 will be done upon this basis, however, as before that amount is spent this year, the Minister of Railways and Canals will call for public tenders for the completion of the work. The cost-plus contracts have been placed with the former contractors.