The Canadian Engineer

Vol. X .- No. 11.

TORONTO AND MONTREAL, NOVEMBER, 1903.

PRICE 10 CENTS

The Canadian Engineer.

SSUED MONTHLY IN THE INTERESTS OF THE

CIVIL, MECHANICAL, ELECTRICAL, LOCOMOTIVE, STATIONARY;
MARINE, MINING AND SANITARY ENGINEER, THE SURVEYOR,
THE MANUFACTURER, THE CONTRACTOR AND THE
MERCHANT IN THE METAL TRADES.

Subscription—Canada, Great Britain and the United States, \$1.00 per year, foreign, 6s. Advertising rates on application.

Offices—18 Court Sts. Toronto; and Fraser Building, Montreal.

Toronto Telephone, Main 4310. Montreal Telephone, Main 2589.

BIGGAR-SAMUEL, LIMITED, Publishers,

All business correspondence should be addressed to our Montreal office. Editorial matter, cuts, electros and drawings should be addressed to the Toronto Office, and should be sent whenever possible, by mail, not by express. The publishers do not undertake to pay duty on cuts from abroad. Changes of advertisements should be in our hands not later than the 15th of the preceding month or if proof is desired, 4 days earlier.

CONTENTS OF THIS NUMBER :

Asbestos, Use and Production of	301
American Thirty Inch Lathe	
British Trade with Canada	296
Canadian Soc. of Civil Engineers.312,	
Coolgardie Water Scheme	304
County Roads	310
Canadian Association of Stationery	3
Engineers	220
Drying Coal	298
Engineer, Work of the	319
Engineer's Club of Toronto	320
Fairbanks Co's New Branch House.	296
Frost Troubles with Compressed Air	290
Frost Troubles with Compressed An	207
Apparatus Flight of Birds, Mechanical Problem	305
Flight of Birds, Mechanical Problem	
of the	304
Good Roads, How France Main-	
tains Her	
Industrial Notes	
Light, Heat, Power, etc	310
Locomotive and Machine Co. of	
Montreal, Shops of	
Metric vs. English Measures	301

Modern Foundry and Pattern Shop	
Equipment	299
Metric Measures and Weights	293
New Companies	43
New York State Canals	298
Personal	320
Peterboro, A Visit to Industrial	295
Railway Subsidies.,	297
Repairing by Metal Cement	305
" a Steam Pump Gland	320
Shaft, Lining up a	306
South African Preferential Tariff	294
Telephones, Rural. Some Amusing	
Complications	303
Things, Mechanical	303
Transportation	313
Tides, Power from	313
Telephone Legislation	312
Telephones, Municipal	306
Telephone Service in Toronto Junc-	300
	201
tion, An Independent	295
Water Lot Surveys and Plans	300

METRIC MEASURES AND WEIGHTS.

A correspondent wishes to know the present status of the metric system of weights and measures in Canada. In reply we may say that an "act to render permissive the use of the metric or decimal system of weights and measures" was passed by the Dominion Parliament in 1871, and by that act the metric system was legalized throughout Canada. That is to say anyone may now buy or sell by the metric system, and no contract or dealing can be nullified by reason of the terms and quantities being specified in The question of making the metric, system compulsory in Canada, as has been done in several other countries which have adopted it within recent years has come up in Parliament and the Cabinet, but it has been felt that to make such a step effective it would be necessary that either Great Britain or the United States should take the same step No compulsory act is therefore at the same time. likely to be passed until one or both of those countries adopt it. In Great Britain a permissive act has existed for a good many years, and a large majority of members of the Imperial Parliament have pronounced in favor of it, while almost every chamber of commerce, and many leading scientific institutions have There is a still stronger petitioned in favor of it. feeling among the commercial and scientific men of Great Britain in favor of decimalizing the English coinage, but the obstacle to these changes is the masses and not the commercial classes. The latter realize that one of the causes of the rapid expansion of the foreign trade of Germany and other European nations compared with that of Great Britain, is the steady spread of the metric system throughout the civilized world. The United States also realizes this handicap upon its prospects in foreign trade, and though there is the same conservatism among the people there as in Great Britain over the change from familiar measures, the United States Government is so convinced of the advantages of the metric system that after the lapse of two years the specifications on all government contracts shall be called for in the metric system. Every manufacturer and dealer who wishes to get a Government contract will have to learn to figure in the metric system.

The letter of Chas. Baillairge, C.E., in this issue, points out some of the objections that can be urged against the metric system. We may agree with Mr. Baillairge, that the number 12 affords the greatest number of even fractions of any that could be selected. It can be divided by 2, 3, 4, or 6, without a remainder; and the divisions of the foot into 12 inches is a very The number 12 and its multiples convenient one. were favorites with the Jews, who were a practical But unfortunately the duodecimal system does not run through our English weights and measures. In weights, for instance, we have three tables, all of them differing without any necessity, and only two of them having a weight or denomination com-In the metric system all the prising 12 units. measures whether of length, area, volume or capacity are related to each other, and all are based on the decimal system of notation—that is 10 of one denomination make one of the next higher. A person of ordinary intelligence can take the metric wall chart published by the Canadian Engineer, and learn the whole system in an hour. No one who recollects his early school days can say the same of our present cumbersome system.

The critics of the metric system are apt to get into a confusion of thought on this subject. The chief objections they urge are really no reasons against the metric system, but against the decimal system of notation. Their quarrel should be with the arithmetic and not with the metric system. The decimal system of computing numbers is practically universal, and the metric system only translates the present varying and confusing tables into the system of figure-computing which is in universal use. It may be that 12 is a better scale than 10 for computation, and this may be