Editorial

WHILE ENGINEERING PICKS UP—"HAVE A CAN DO."

It has been such a long pull since the beginning of that depression—which was old enough to speak for itself before a single shot was fired in Belgium, and which, until smothered in Canadian khaki, threatened to create a relentless wail of unemployment throughout the length and breadth of the land. How many engineers managed to weather the slump without an occasional, or at least a single, instance of being mired in that frame of mind commonly known as "down in the dumps"? The coveted call for engineers that, once upon a time, developed into a still-hunt and bickerings over increased salaries, gave place to another call which our engineers have answered just as manfully, and with no questions asked. The engineer is a happy man when he is busy. After the decline in business activity, and before the call for Canadians, in that period when the maze of depression shut out the horizon of engineering application and the latter showed signs of being overcome with a lethargy of indefinite duration, the engineer was not happy. When the "breaks" fade behind financial depression, and a fickle future refuses to gesture at the most enticing forecast, there is the uncomfortable foreboding of rust on the vernier and a warp in the slide-rule.

Although the engineers of Canada have responded in such large numbers to the Empire's call, there are many still who, owing to responsibilities and army regulations, must remain at home to serve. For both the brighter prospects of 1916, though a bit distant, must create incentive and inspiration. Exercise for a little longer of the noble attribute of patience is advice that falls on well-proven ground.

One of our Western engineers sends us some inspiring lines that will not be found amiss by young or old. He assures us that now, as never before, every Canadian engineer must have a "can do."

"The youth who has entered the technical institute, the young man who has entered the university, the rodman, instrumentman, assistant engineer, the chief of the office—each must have for his motto, 'I can and will do.'

" 'Yesterday is past; to-morrow's a mystery; to-day is here! make the best use of it' is a motto which should serve a useful purpose.

"This war, with its frightful list of casualties, may be with us for a long time yet, for we know full well that the real fighting will start when Joffre and French invade the German provinces and the steam roller of the Russian army sets to work to assist in grinding the domineering, hateful Prussian militarism into dust.

"To those who have not yet volunteered, to those who are still doing their duty as civilians, each has a further special call upon him, the war first—after that, the work which is to hand. To those members of our engineering societies who are apt to become neglectful, due to the cares of business and advancing years, 'have a can do' and for another year or so, let it be your solid determination to put in a prompt attendance at each regular meeting and so help on the good work of your society. Don't delay, but 'have a can do' and do it now."

NEW USES FOR COBALT METAL.

In the silver refineries of Ontario last year 913,778 pounds of cobalt oxide were produced. Until the outbreak of war, trade in cobalt was good with England and the continent of Europe. There is now little prospect of a revival of the demand for cobalt on a large scale until war gives place to peace. The chief use of cobalt has been in the form of oxide for the production of cobalt blue and in the manufacture of porcelain, enamelled ware, etc. Experiments are being made with cobalt with a view to its use as a substitute for nickel in the plating of metallic objects, and it may find employment in the making of alloys, notably of steel.

The metal cobalt resembles nickel in almost all its properties. Its density, malleability, ductility, hardness, tensile strength, and electrical properties are, so far as they are known, very similar to those of nickel. These properties of nickel make it of remarkable industrial value in the composition of a great variety of alloys. Of these may be mentioned the high-grade steels, where toughness and hardness are desired; for automobile parts, steel tubes, gun steel, cranks and crank-shafts, boiler-plates, tires, connecting-rods and axles; the nickel-iron wires such as invar and platinite, with low temperature coefficients of electrical resistance and of expansion respectively; and the variety of important nickel alloys with non-corrosive properties, for coins, boat propellers, etc. It would be surprising if cobalt could not be advantageously substituted for nickel to produce a better grade of some of the above products. As these are high-grade products, where superior qualities are desired, a high cost, within certain limits, would not be prohibitive. Hence, if research leads to the substitution of cobalt for nickel, even in the case of one of these products, a market for the metal cobalt at a reasonable price would be assured, and large sums of money would be annually added to the returns from Canadian natural resources.

Mr. T. W. Gibson, Deputy Minister of Mines, Ontario, has a suggestion which deserves consideration. The five-cent piece is the least desirable of our Canadian silver coins, mainly because of its smallness in size and the consequent difficulty in handling it, and especially of distinguishing it from the 10-cent piece without close ocular examination. Why should it not be replaced by a coin made of pure cobalt, intermediate in size between the 10-cent piece and the 25-cent piece? asks Mr. Gibson. Such a coin would have many advantages. It would be readily distinguishable from all other coins. It would be attractive in color, pure cobalt being similar in appearance to pure nickel, but somewhat more silvery, and tarnishing slowly, if at all. Being very hard, it would be difficult to counterfeit. Lastly, the chief source of cobalt being for the present in Canada, a cobalt coin would be distinctively Canadian, and its introduction would strike a chord to which the national consciousness would readily respond. The coin could be called a "cobalt," just as the United States 5-cent piece of copper-nickel alloy is called a "nickel." By comparison, however, a pure cobalt coin would be greatly superior in appearance and every other respect to the so-called "nickel," which contains only 25 per cent. of that metal.