on the principle of choosing men for their knowledge, rather than their ability, I should have been surrounded by an incomparably less efficient staff than that which now governs the Elswick Works.

Any man who has had experience in any of the great industrial workshops of the world knows well, that these statements made by past Presidents of the two greatest Engineering organizations on two contiments is true. It is the old story of the difference between knowledge and wisdom. Let me cite a practical illustration from Joseph Cook:

Napoleon one day riding in advance of his army, came to a bridgeless river, over which it was necessary that his army should cross on a forced march, "Tell me—said the great Emperor to his Engineer, "the breadth of this stream." —"Sire, I cannot"—was the reply, "My scientific instruments are with the army in the rear, and we are ten miles ahead of it." "Measure the breadth of this stream instantly." "Sire, be reasonable." "Ascertain at once the width of this stream or you shall be deposed from office." The Engineer drew down the cap piece on his helmet until the edge touched the opposite bank, then holding himself erect, turned on his heel and noticed where the edge piece touched—in imagination—the land on which he stood, then paced the distance. "Sire, so many yards, approximately." He was promoted, not degraded.

This story typifies exactly the kind of mental training which should be aimed at in Technical education. It should be calculated not to make mere machines, men who cannot do without their books and instruments, who can apply the principles of Science to the practical cases of life in business and industry.

#### XXX

# Misrepresenting Canada.

"Sandy," said McPherson, "what maks yer nose sae reed?" "Weel," replied Sandy, "Al jus' tell yer, It's allwus glowin' reed wi' pride, because it doesna go aboot pokin' itsel inta ither peoples' buzness." We were reminded of this antique bit of Scottish wit, when first tempted to criticize the astonishing March cover in which one of our Technical contemporaries was clothed; and we hesitated. Loyalty to the cause of exact Science, however, and zeal in the interests of progress, constrained us to follow the proverbial wisdom of second thoughts.

That cover is nothing less than a rank libel on Canadian Engineering. In the foreground are two Blast Furnaces of primitive type, belching forth immense volumes of smoke and flame. As we gazed thereon, we were filled with unspeakable horror, lest the bales of cotton in the right-hand corner, sailing ships and extensive wooden buildings on the other side of the narrow river should catch fire, and spread devastation all around. The reflection of the flames on the wooden elevator poles is a very pretty sight. One cruel critic even suggested that the molten metal is shown running into the river for rapid cooling, and hence quick delivery to the waiting ships.

Now all this may be art, but it certainly does not indicate modern metallurgical practice in the Dominion. Wasteful, open-topped furnaces, like those pictured, existed in Staffordshire, England, and Pennsylvania, United States, eighty years ago; but any firm using them to-day, would be bankrupt in six months! The Blast Furnace should be as cool as possible at the top, as hot as possible at the bottom. In 1860 Cowper invented his famous regenerative

stoves for utilizing the waste gases. From that time until now, furnaces have been provided with bell, hopper, closed top, and downcomer; so that the unconsumed gases-rich in carbons-issuing at 350 deg. F. are conveyed down to the stoves, regenerated, and returned to the furnace hearth again, at a temperature of 1,200 deg. to 1,500 deg. F., thus effecting not only a great saving in fuel, but preserving the verdure of the fields, the foliage on the trees, and the health of neighboring villages and towns. The Engineers of Canada have the inestimable advantage of beginning where the European and American leave off. To give an impression, therefore, to the outside world, that they are so far behind the times, as to use an antiquated and criminally wasteful appliance like that pictured on the cover before us, is, to say the least of it, a gross misrepresentation.

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# **Editorial Notes.**

American Enterprise in Canada.

The London "Times" and other English papers, are giving prominence to the report that the United States Steel

Corporation are about to erect a \$10,-000,000 plant at Sarnia. History showeth that every time there is any talk of the Canadian Government proposing to increase the tariff on steel, etc., the United States Steel Corporation send over Caleb and Joshua, and their special advertising agent, to spy out the land. The bluff has worked before. Statesmen are scared and rivals hesitate.

We have pleasure in directing the at-System. tention of our readers, to the series of copyright articles commencing in this number, entitled, "System for Industrial Establishments," by A. J. Lavoie. After careful analysis, and observation of its use in the shops, we hesitate not to say that this system is the most comprehensive, and at the same time the most practical scheme for saving time and accelerating production in Engineering workshops, that we have seen. By the "Lavoie system," the cost of everything—no matter how small and insignificant, is shown; and this is achieved with a minimum amount of clerical work. Works-Managers, heads of departments; and Engineers generally cannot afford to miss the series.

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Trade with Great Britain and Japan, are already bearthe Orient.

Glasgow is securing a very considerable share of the orders for railway running stock, which the Japanese Government has issued. Early in the spring a large contract for locomotives was secured by the North British Locomotive "combine," and now a second order for 100 additional engines has been placed with the same company.

Canada has at least three large plants specially designed for locomotive building, and possesses unique transportation advantages. The question naturally arises, therefore, how is it the Dominion is not getting some of this business? When Japan gets that inevitable war indemnity, there will be stirring times in the industrial world. In view of these trade possibilities, it was very gratifying to notice in the