

AGRICULTURE AND THE ENGINEER

ABSTRACT OF AN ADDRESS DELIVERED BEFORE THE OTTAWA BRANCH OF THE CANADIAN SOCIETY OF CIVIL ENGINEERS BY HON. MARTIN BURRELL, MINISTER OF AGRICULTURE

WOEFULLY deficient in engineering knowledge, I have a whole-hearted admiration for the work of the engineer and what it stands for. It has been cynically said that a man with a powerful voice, and rapid utterance, no matter what he says, can attain a high authority in politics. I cannot, of course, be expected to subscribe to such a half truth, but, in any case, the engineer does not achieve authority in this way. He is a doer and not a talker, and in the long run it is doing and not talking that counts.

To be an engineer in the best sense of that word a man's whole attitude to his life work must be charged with sincerity, and sincerity is one of the fine things of life. Nature and nature's laws cannot be cheated. Successful achievement is only possible by understanding and co-operating with the eternal laws of the universe. There is, therefore, a continual incentive to clear thought and high endeavor. Difficult problems the engineer must face—as we all have to face, but, in solving them, he has the supreme satisfaction of knowing that his accomplished work abides, a silent and powerful witness that he has not passed through this world in vain.

I think, gentlemen, it must be easier for an engineer than for a man in public life to stick to his ideals. We cling to them as long as possible, but find them hard to attain. Too soon it becomes like the case of the Irishman with his pig. When he killed his pig he said, "It didn't weigh as much as I expected, and I never thought that it would." Nevertheless, it is good to cherish even unattainable ideals.

By virtue of being engineers you are specialists and I envy you the ability and the opportunity of giving undivided thought to the one task which, for the time, is yours. Our fate is different—a kaleidoscopic change of tasks, with no time to concentrate on any one of them. Democracy, as many understand it, implies the right of free access at all times to those who are carrying on the affairs of State. You reach your office in the morning and find a bulky mail, to which two hours' undistracted attention should be given. In half an hour your secretary announces someone who insists, without previous appointment, on discussing a nice, brief, compact little question like that of oriental immigration. Your visitor points out the transcendent importance of this subject to the future of Canada and the Empire. You may have given this subject some careful study, but, convinced of the futility of either giving or receiving anything of real value in a quarter of an hour, you nevertheless give the quarter of an hour. The mental slate sponged clean, you turn back to the correspondence. Ten minutes pass, when another member of the democracy is announced. You fume inwardly, but are told he has travelled 1,200 miles to see you and the matter is urgent and important. He is shown in and at some length, and with great vigor, informs you that in respect to a certain matter he has been treated so rottenly that, unless reparation is at once made, neither you nor your government will last longer than a cat in h—. We are, in a sense, engineers of the

State. Gentlemen, don't you think we deserve credit if, under these circumstances, we can still call ourselves "civil" engineers?

And now, as I have exhausted my time and possibly your patience, I turn to my title, "Agriculture and the Engineer." If directly engineering has little to do with agriculture, indirectly its relationship is vital. It would hardly be too much to say that agriculture and engineering are, of all professions and arts, the most important to the world at the present moment. As an agriculturist, my chief contact with engineering work has been in connection with irrigation. In the large western district with which I am especially familiar, the work of the irrigation engineer is indispensable to successful agriculture. Water, the conductor of food to the growing plant and a necessary constituent of the mature plant, whether fruit or vegetable, is a vital factor. In addition to the immense evaporation through plant respiration, 40 or 50 tons of water per acre will be evaporated from the soil itself on a warm and windy day. With a rainfall of only 8 to 12 inches per annum, it is easy to see where the irrigation engineer comes in. I bear testimony to the immense value of his services in those districts where I have had personal knowledge of his work, and if I had time I could indicate what you are doubtless familiar with—the vast areas of the world's surface in India, Australia, Japan, United States and other countries which have been made to serve man's needs by the skill, the efficiency and the integrity of the engineer.

Undoubtedly the engineer's services to agriculture are incalculable. Without his work in the construction of railroads, bridges and roads, the produce of the agriculturist would be unavailable to man. There are many other ways in which the engineer's services are of immense use; I do not think it is necessary for me to dilate on them. Engineers and agriculturists, we are all aiming at the same things; that is, to produce, and to reduce the cost of production. Your function, perhaps, is more concerned with the latter than with the former purpose. I have heard it said to-day—I think it was your chairman who said it—that one of the functions of engineering was that any engineer could make a dollar go farther than a fool could two dollars. One of the functions of agriculture is to make two blades of grass grow where only one grew before. There is an intimate relation between the services that the engineer and the agriculturist can render to the State. When I think of the vast northern country that is familiar to me, all up through Cariboo, for instance, where for something like forty or fifty years men were living and toiling and producing two or three hundred miles away from what we know as a modern system of transportation, and when I come into contact with the people in that region, I get an evidence of what the engineer's work is by the longing they all have for better and easier modes of transportation, and I realize how intensely important the work of the engineer is, even to agriculture.

To one who has lived as I have in British Columbia, the indebtedness to the engineer must be ever present. Again and again as I have travelled through the moun-