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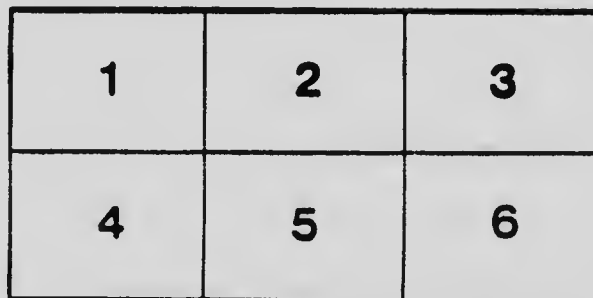
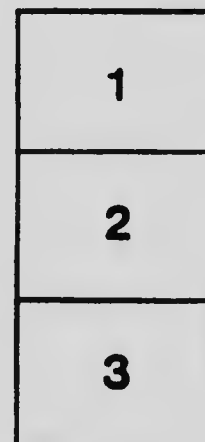
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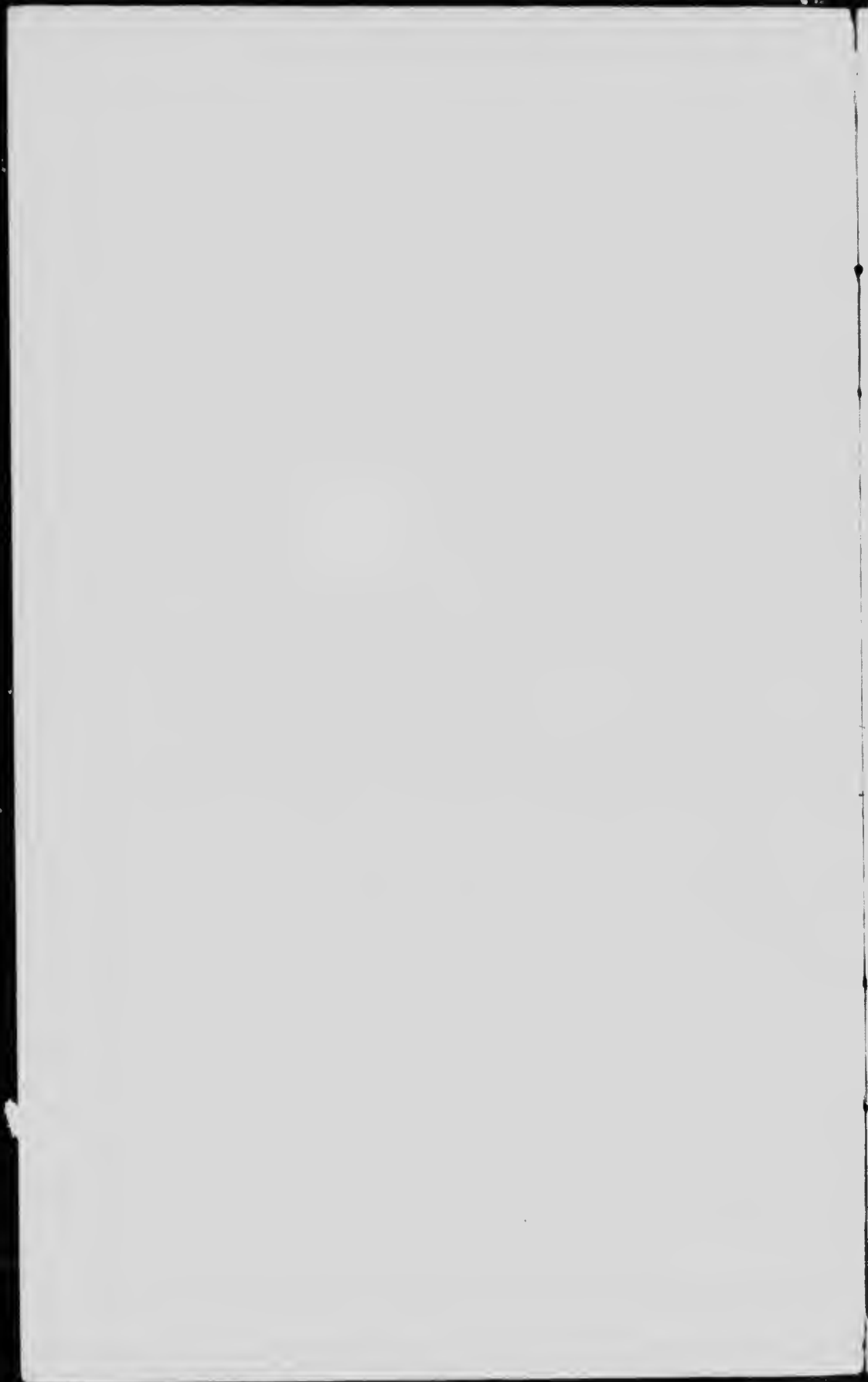


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How to
Make Canada
Efficient

JAMES L. HUGHES, LL.D.



How to Make Canada Efficient

*An Address Delivered before the
Canadian Club, at a Banquet
Held in "The Macdonald,"
Edmonton, on Novem-
ber 25th, 1915*

By

JAMES L. HUGHES, L. L. D.

Toronto



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THIS BOOKLET

**WAS DONE AT THE PRESS OF THE TECHNICAL HIGH SCHOOL,
EDMONTON, ALBERTA, BY THE FOLLOWING STUDENTS:**

**Kathleen Baltzan : Harry Pengelly : Lawrence Aldridge : Clifford Smith
Cyril Fletcher : Gordon Taylor : Garfield Harvey : Jack Hoogenboezem
Herbert Fletcher**

HOW TO MAKE CANADA EFFICIENT

THREE things are necessary to make Canada efficient:

I. We must become conscious of the greatness of our resources, and have faith in our power to develop them.

II. We must train an efficient and capable people.

III. We must become more thrifty individually and nationally.

I. We are becoming conscious of our power. We have startled the world during the past eventful year by what we have achieved. Better still, we have startled ourselves. This is for us the most important result of the war so far. Walt Whitman's line, "I am larger than I thought," is one of the most profound lines ever written. It is a most developing and faith-giving thought individually and nationally. Canada has found that she is larger than she thought." As Whitman says with deep philosophic vision in another place, "We, too, have heard the resistless call of ourselves." The individual who "hears the resistless call of himself," and answers the call with faith and achieving effort, reaches his true destiny. So, too, does the nation reach its true destiny whose people unitedly respond to its resistless call with clear vision, with a consciousness of its power, and with united effort to achieve its highest efficiency. When fifteen months ago the government of Canada cabled to the government of the Empire an offer of 20,000 men to assist in defeating the enemies of freedom, and establishing peace on a just and lasting basis, most Canadians were skeptical as to the power of Canada to make good the offer. We were thrilled with a new consciousness, when in six weeks a well trained army of over 30,000 men sailed from Quebec to do their duty side by side with their brave comrades from England, Scot-

land, Ireland and Wales in co-operation with the soldiers of France and Belgium. We have since startled the world and ourselves by the rapidity and thoroughness with which we have already trained an army of two hundred thousand. We have surprised ourselves so thoroughly that if tomorrow the government issued a call for twice two hundred thousand few of us would doubt the power of our country to respond successfully to the call.

Our noble soldiers at the front have roused in us a new faith and a new pride in Canada by proving to be as brave and heroic men as ever fought for justice, liberty, higher civilization and Christian democracy in any war in the history of the world. Our hearts grow strong when we remember that our Canadian volunteer army met, and checked, and triumphantly defeated the best trained German regulars, although the enemy outnumbered them by ten to one. Our men at St. Julien gave a new meaning to the word "Canadians," and gave their admiring countrymen at home a new honor, a new revelation and a new determination to be more worthy.

But Canada has done another kind of work equally wonderful and stimulating. When war broke out, and for some time afterwards, there was not in Canada a single pound of steel suitable for the manufacture of shells. There was not in Canada a single factory or single machine for the manufacture of shells. We had neither the zinc nor the copper to make the brass necessary for the manufacture of shells. Plenty of zinc and copper we had, but we had never refined our zinc or our copper. We are now refining one hundred thousand pounds of zinc every day in British Columbia, and we are refining our copper and making our own brass. We had never produced an ounce of the materials used in the manufacture of high explosives in Canada. We learned that high explosives were absolutely essential in the manufacture of effective munitions, and a manufactory was erected at a cost of three millions of dollars near Parry Sound, Ontario, where some twenty-five hundred men are producing high explosives and other essential products.

At the present time we have over three hundred munition factories in Canada, in which an army of one hundred thousand skilled mechanics are engaged, and at the

present rate of production the yearly income from these factories amounts to over three hundred and fifty million dollars.

Shall our faith, our vision, our energy and our productive power pass from us after the war? Assuredly not. We have learned our lesson. We are becoming conscious of our resources and of our power, and, when peace is won, we will multiply many times the millions we are earning in time of war.

We shall not sell to our neighbors our pulpwood for eight dollars per ton, which they easily transform into paper worth one hundred and sixty-seven dollars per ton. We have learned our productive power, and we are going to manufacture our own raw materials in our own country, producing articles of utility and beauty for the markets of the world. Our markets will be larger than ever after the war. The German colonies will be hers no longer. They will belong to the British people and their allies — mainly to Great Britain. They will be open to us. Russia will be open to us. The Russian people will not buy from the nation that repaid their kindness by such base treachery. There will be no difficulty about finding markets for all we manufacture. That piece of clay worth five cents may be transformed by well trained artisans and artists into a vase worth ten dollars. We are going to keep the nine dollars and ninety-five cents in Canada and increase the wealth of our own country and of our own people. We will manufacture our own wood, our own nickel, our own cobalt and all our raw materials, now that we are conscious of our power.

II. We must train our people more thoroughly and more intelligently, if we are to become truly efficient. Germany was the most efficient country in the world before the war. Why was Germany efficient? There are five reasons for her efficiency.

1. She had an excellent kindergarten system at the basis of her educational work. The kindergarten trains the child to be original, to be constructive, to be productive and to love work. It is the only logical educational system yet revealed that works into the fibre of the character of the child when he is young the fundamental elements of industrial

skill, and reveals to him the supreme joy of productive achievement on industrial lines.

2. She had the best system of applied art. She recognized clearly that beauty and utility are not rivals, but partners. Those who visited the World's Fair in 1893 in Chicago could easily see why the manufactures of Germany were so attractive to the people everywhere. They were not only useful, they were beautiful; they were not only strong, they were artistic; and we do not need to wonder that more new factories were established in Germany during the last thirty years than were established in all the other countries of the world during that time.

3. She had the best system of applied science. The Germans are not as inventive as the British, but they are more efficient. An Englishman discovered the process of making dyes from coal tar. The Germans reaped the harvest. They trained more than a thousand coal tar scientists. They trained over forty thousand scientists to produce what the one thousand special chemists discovered. They found one hundred and fifty-five products in coal tar. They used ten of these products in making dyes, and they made a practically unlimited number of dyes. The banking system of southwestern Germany got behind the manufacture of dyes. Special schools were established to teach scientific salesmanship. The result of all this was that the Germans became the dye manufacturers of the whole world. The cloth manufacturers of England had to cancel their contracts everywhere after the war broke out, because they could not get dyes from Germany. This is a typical illustration of German efficiency.

4. She had the best system of technical education. The great technical institution at Charlottenburg is the largest and most perfectly equipped technical school in the world. In it the German youths were trained to make everything their country might need in peace or in war, even battle-ships.

5. She had the only real system of vocational training in the world. I visited Germany in 1907 to study the vocational schools. In Munich, where at the time the system was most thorough, I found that every boy who left school at the age of fourteen to work in a factory of any kind

had to leave his factory three afternoons each week and spend three hours each afternoon in a special school devoted to the preparation of boys like himself, who were working at his particular trade for the best possible success in the life work they had chosen. There were at the time of my visit more than forty vocational schools in Munich. In the school in which all classes in the iron trades were trained, the boys were taught to understand the scientific basis of the processes for extracting iron from the ores brought from the mines. They had a training for four years, during which time they learned the scientific principles underlying the operations of transforming pig iron into every known form of iron and steel; and they took part in these processes under the direction of experienced and competent instructors. They learned every process known to modern science for coloring steel by chemistry and by electricity. They learned, also, the principles of art that may be applied in working malleable iron into useful and artistic products, and took a thorough course in applied art in iron. Every known method of welding was learned and practised by each student during his four years' course. It is impossible to over estimate the influence of such vocational training on the workmen of a nation in developing their industrial efficiency, in increasing their value to their country, and in giving a higher consciousness of their dignity as men and artisans.

There are men — manufacturers in Canada — who say in faithless tones: "We never can hope to compete with Germany on account of the cheapness of her labour." I met two manufacturers recently. One of them expressed his views in the words I have just used. The other said in the dominant tone of faith based on experience: "Of course we can compete with Germany. I used to pay fifty cents per thousand for the steel clips used in my factory to fasten the buttons on shoes. I imported them from the United States. A representative of a German factory some years ago offered to supply them for seven cents per thousand, and I used German clips till the war broke out. When my German supply was shut off, I wrote to a steel manufacturer in Hamilton, Ontario, and I now get as good clips as those supplied from Germany at five cents per thousand."

We really are not yet conscious of what we can do in Canada. I hope we will never try to compete with Germany by reducing the wages of our working men and women. We can never develop true Canadian manhood or womanhood by trying to force the great body of our people to work for low wages. We should not try to make our nation rich at the expense of any class in our country. We can pay our working men and women higher wages and yet ultimately lead the world in manufacturing, if we, first, become truly conscious of the greatness of our resources and develop faith in our own productive power; and if we, second, train our children in every part of the Dominion to be original, achieving and scientifically constructive.

We will never admit that a despotism can produce a better type of manhood and womanhood than a Christian democracy. The lessons connected with dyes will never be forgotten. We are more inventive than any European nation. We discovered the process of making dyes from coal tar. We allowed, through lack of efficiency, the Germans to make the dyes of the world by using our discovery. When war broke out, the cloth manufacturers of the world were unable to get dyes to color their yarn. Germany had control of the dyes, but worse than that she had, also, through efficiency in the scientific application of our discovery, control of all the material for producing explosives. High explosives are made from two of the ten products of coal tar used in making dyes. So the Germans controlled not only the dyes but the high explosives, too. This in the early months of the war placed Great Britain and her allies at a great disadvantage. We are no longer at a disadvantage. We are awake, and we are going to keep awake and see more clearly as the greater and more revealing years come and go.

Hon. Mr. Runciman sounded the true note in the British Parliament when he said: "British traders, despite the handicap of the war, have worked wonders in trade development. We have completely broken down the German monopolies in optical glass, dyes, electrical apparatus, and certain chemicals, and these monopolies will not again be renewed. The policy of the Board of Trade is that there shall be no essential article, either for the arts of

peace or war, that we cannot produce within either Great Britain or the Empire." That is the clarion call of our Motherland. Canada will answer this call for times of peace as earnestly, as intelligently and as successfully as she answered the Motherland in time of war.

The supreme essential in making our country efficient is to train our people thoroughly in the fundamental elements of scientific productivity. We must have the kindergarten in all our cities and towns; we must have an efficient system of applied art and of applied science; we must have greatly improved and more widely extended technical education, and we must adopt universally a system of vocational training.

We should have in every province a school system as wisely planned and as thoroughly efficient in public schools, in high schools and in the universities for productive technical and industrial education as we now have for the various departments of culture. In the public schools we must provide during a part of the course for developing the child's natural tendencies to do things and to be productively constructive. Many of the best types in our elementary schools are dwarfed because we confine our educational work almost exclusively to book study. A more extended system of manual training and artistic work must be introduced in all our public schools if the interest of the children is to be preserved, and if they are to be properly prepared for further development along the lines of individual and national efficiency.

We should have in each county or group of counties special high schools for technical and scientific agricultural training, both departments of training being given in each of such high schools. Above the high schools there should be separate colleges for technical education and for agricultural education. Each province should have at least one such college for technical education, and one for agricultural education. In most of the provinces there should be more than one such college for each of these important departments.

Finally, the universities should provide the fullest possible courses for those who wish to take them in applied practical science related to the great departments of natural products and of industry and art. Canadian young

men and women should be as well equipped for efficiency as those of any other nation. The school systems do not now provide adequately for such equipment. Above the public schools all our higher educational institutions should be divided into two classes. We should by all means continue the system of high schools and universities for general culture for those who wish to take this course; but we must certainly provide as good a course for those who wish to devote their lives as operatives or as leaders in promoting the efficiency of their country. The two courses cannot be satisfactorily given in the same schools and colleges above the public schools. The schools for technical and agricultural education should give thorough courses in applied science, applied art, mathematics so far as related to the special objects of the schools, and the development of the powers of self-expression in writing, speaking and as many other forms of effective leadership as possible.

You have in Alberta an admirable system for promoting technical education. Your government is really in partnership with the leading cities. Your plan is excellent for this great work. The completion of your plan to make it efficient is to secure the co-operation of the Dominion with all the provinces. This was urged by the Dominion Conference on Technical Education held in Toronto in September.

The work of education is wisely left in the hands of the provinces. Notwithstanding this fact, it is quite proper for the Dominion to aid the provinces in the promotion of educational work that is certain to develop the productive resources of the whole of our country. The government of the Dominion has already made a grant of ten million dollars to aid the provinces to improve agricultural education. This was a wise course to adopt. Agriculture is one of the two great arms of our national efficiency. Manufacturing is the other strong arm. When fully developed, it may become our strong right arm. The Dominion should grant as much for improving technical and industrial education in Canada as has already been given for agricultural education. It will be a paying investment for the country and it will improve the education of the children in cities and towns, as the grant for agricultural education is going to improve the educational work in rural districts.

III. Our people must be trained to be more thrifty and less wasteful in order to become as efficient as we should be. The practical training in thrift must be given practically, not theoretically. The school savings bank should become a national institution. It should be introduced into every city and town school in the Dominion, and ultimately into rural schools as well, when the rural post office delivery is perfected. Children have been trained to be spendthrifts. Friends gave them money in small sums and said, "Here, dear, go and get yourself some candy." The children did not need the candy, so they were trained in the most effective way to spend money for what they did not need. A spendthrift is a man or woman who spends money for what is not needed. True economy consists in saving money that we should not spend.

Even school children should be trained to earn money, as well as to save it. When I gave up my work in Toronto two years ago, the children in the public schools earned before and after school and on Saturdays \$4,534 per week. They, of course, earned far more money during holiday times. During the school year of forty weeks the pupils earned over \$180,000, and they were better in every way for the work they did.

In nearly every department of life we have been wasteful. We are beginning to learn how wasteful we have been. We have begun to make our refuse and our garbage productive. That long train of cylindrical steel cars is loaded with methylated spirits made from the refuse from a beet sugar factory. Those mines are paying expenses by using waste materials formerly thrown in the dump heaps. The smoke that formerly poured out in clouds from those tall chimneys, making the air unfit to breathe and soiling the linen and the faces of the people, is saved and some of the materials required for dyes and high explosives produced from it. The owner of that machine pulling the pine stumps from that field does not charge the farmer large sums for his work as he formerly did. He makes it pay handsomely to extract the stumps, by getting the turpentine out of them. Those immense stacks of straw on the fertile prairies in your great northwest have been burned in the past. The farmers who burned them had to pay very high prices for coal for fuel. Now, a machine has been patent-

ed to go to the farmers and at very moderate prices transform these straw stacks into fuel resembling a combination of coal and turf. The old clothes, the old papers, the old magazines, the old iron, the old tin cans, the old bones are now saved by wise people to sell to other wise people.

We are getting wiser, but we have much to do yet before we are reasonably thrifty. Our national drink bill, if saved, would finance the war and leave enough to provide institutions and equipment to provide the absolutely necessary training to make Canadians thoroughly efficient.

We have startled the world and ourselves during the past year by our splendid achievements during war time. With our newly developed faith, with really efficient educational training, and with due recognition of the moral value and the practical value of thrift, we should do much more magnificent work in time of peace.



