

WILL GOVERNMENT ASSIST RESEARCH WORK?

German Investigations Aided Trade Development—How Canada Can Attain Success

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The German government acted wisely when, many years ago, it co-operated with the leading universities in the country in establishing and maintaining research departments, where, under the universities' administration, original investigations were carried on with a view to fostering, by improved methods and new discoveries, the manufacturing, mining and agricultural interests of Germany, and of furnishing these varied interests with great numbers of experts trained in original work, and capable of conducting further investigations at the manufacturing plants throughout the country.

The large and rapid development of the industries of Germany, and the strides made in its export trade, were, it is claimed, greatly due to this far-sighted policy of the government. Its effects are also now seen there in the activities of science in supplying new material and furnishing many new methods, adopted as a result of the present war, not merely in the manufacture of munitions, but in connection with food supplies and clothing, and in substitutes for raw material hitherto in use.

Left to Individuals.

The British Government has, in years past, been content to leave largely to individual investigation and to individual enterprise, the development of the industries of the United Kingdom. It has not contributed as much, in the past, to further original research as it could have done, and in comparison with Germany, Great Britain has, in consequence, somewhat suffered. With the outbreak of the war, there came a change, due to the necessity of quickly meeting, by even more effective appliances, the highly developed munitions and other war equipment of the enemy. It can now be said that the desire of the government is not only to encourage the development of research in lines associated with war material, but to assist in the carrying on of general scientific research by grants in advance from the public treasury. A committee of the cabinet, aided by an advisory council of scientific men, has been formed for the purpose.

What is Canada Doing?

What are we doing in Canada? With the great increase during recent years in internal trade, quite disproportionate to the increase in population, and with a huge new foreign trade almost thrown at us by the war, and which the manufacturers are bound to retain and develop, the opportunity has come to us to promptly, and more carefully than hitherto, inquire into the national assets, and how to use them, to the best advantage, for the national benefit. In going abroad for business, we must be prepared to compete with other nations in price, quality and the adaptability of our work to the foreign tastes. Can we find new raw materials within our borders, or, by combinations, improve our raw materials already in use? Can we better our methods of manufacture, and economically utilize the by-products of our industrial plants? Can we, without undue cost, increase the productive capacity of our farms?

Bearing on Future.

These and other questions raise hundreds of problems which can be solved by us, and, in their solution, will lead to constant inventions and discoveries which will have an important bearing on the commercial future of the Dominion. Some valuable research work has been done, in the past, in connection with the government departments both of the Dominion and of Ontario, and in the universities, but not on a concerted plan, nor always with that direct encouragement from the country, which is such an incentive to the investigator. The work has, however, been begun. Will the Dominion government and the manufacturers now give not only their sympathy but their active co-operation in developing and greatly extending the work?

Inquiry as to Natural Resources.

Referring generally to departmental work, the investigations of the geological survey of Canada, begun over sixty years ago under that splendid veteran, Sir William Logan, have included much research work of direct material value to the country, more especially as to the economic minerals

to be found in the Dominion, the extent of area in which they occur or may be expected, and their adaptability to the purposes of the smelter and the manufacturer.

The commission of conservation can also be regarded as an important research department, and has done good work, although perhaps more in the way of bringing to light more clearly what natural features and products are available for the enterprise of the people, and what has been done in developing them, than of original investigations leading to new discoveries and improvements.

The experimental farms and agricultural colleges are also doing valuable research work in producing new varieties of grains, fruits and vegetables, in ascertaining the adaptability of foreign plants to our climate, and in testing new methods of cultivation. Some of these investigations have had a widely spread value throughout the whole country and even beyond.

Research work, to be properly carried out, requires, generally, extensive laboratories, and sometimes, costly equipment, whilst in the investigators there must be knowledge and enthusiasm, backed by a patience undismayed by failure.

Equipment and Experts.

This means well equipped buildings and trained experts. It thus naturally follows that those universities and those government institutions which have the necessary large laboratories and the properly efficient experts on their staffs, are alone well equipped for inaugurating research in those lines in which these institutions specialize. Hitherto, the universities in this country have confined their work almost exclusively to education, which was that sphere for which they were primarily founded.

With the growth, however, of these institutions in recent years, the time has come when some of them should aspire to be centres of aggressive thought, as well as of education. Already, the larger libraries, the equipment in laboratories, the more advanced character of the men in the professorial chairs, and the evident needs of the country in the course of its rapid development, have led to considerable original work being done in our universities both in pure science and in those lines in which manufacturers are directly interested and benefited. Some of these investigations have been undertaken at the request and the expense of the governments; others at the desire of specific manufacturers; whilst still others are the work of members of the staff, undertaken in their personal enthusiasm, but with, always, the extremely limited special outlay which the university could afford.

Basis for New Developments.

During the past year, public interest in discovery and invention have everywhere been aroused, especially where they have resulted in improving the effectiveness of war material and transportation. It is only necessary to recall the widespread feeling of pride throughout the United States last winter, when, at the laboratories of Columbia University, it was discovered that from most crude petroleum, there could be obtained not only a greatly enlarged supply of gasoline, but benzol and its derivative, toluene, so important in the manufacture of dyes and explosives.

One result of the direct co-operation of the federal government there in this discovery has been a large increase in the production of the aniline dyes. Some of the research work done at the universities is necessarily in pure science, and may not appeal, at first, to the manufacturers, but the evolving of a new principle or a new fact in pure science, often furnishes, subsequently, the basis for important industrial developments. Faraday's work in electro-magnetic induction was but lightly appreciated at the time, but afterwards gave rise to the electric-dynamo, and to so many of the revolutions in modern industries, in transportation, and on the economic and useful side of civic and domestic life. Discoveries in pure science pave the way for subsequent industrial and other results.

FORD, ONTARIO, IS GROWING

The growth of Ford, Ont., by reason of the industries which have established in the town and the expansion of the Ford Motor Company of Canada, Limited, has prompted the Canadian Bank of Commerce to open a branch there to care for its business in Walkerville and Ford. Premises have been secured at 27 Sandwich Street. Mr. H. B. Parsons, the bank's Walkerville manager, will have supervision of the branch.