

*Supply—Trade and Commerce*

on that committee. May I remind him that it would not be my responsibility as a member of that committee to call anybody. That would be the responsibility of the committee which would be dominated by the party in power.

**Mr. MacLean:** I should like to make some remarks on the question of scientific research in Canada because in common with many other people in Canada I think it is of fundamental importance. Perhaps to begin with it would be well to have a definition of what we mean by research, especially scientific research. It is not my intention to discuss to any extent the question of applied research and the field of applied science, but I feel there is a very great need for accelerated activity in the field of pure science. To begin with, I should like to quote a definition of what we mean by scientific research. I think that would be a good starting point. I turn to page 168 of the report of the royal commission on the arts, letters and sciences where the following appears:

We might return to the simple definition of many scientists that scientific research is the investigation of natural phenomena in the endeavour to determine laws and relationships which may or may not have a practical application. . . . The "fundamental" research worker studies natural phenomena in the search for laws and relationships. He may or may not have in mind a possible application of his new knowledge. Some scientists refer to fundamental research as the "raw material" of science to be "processed" before it can be used. Others insist that the true scientist loves knowledge for its own sake and that in his absorption in the purely intellectual problem the thought of a practical application, for the moment, is unimportant.

It may be felt by many that parliamentarians can add little or nothing when the problem of research is being studied because it is argued that for the most part parliamentarians are laymen or, at best, very amateur scientists, and that this question should be left strictly to the experts. Naturally the detail of research and what fields should be followed are problems for the experts, but nevertheless I think parliament has a responsibility in this field. In the United Kingdom there is a permanent parliamentary committee on the subject of research, and with reference to that committee I should like to quote very briefly the comment of Dr. W. R. Woolrich, dean of the college of engineering of the University of Texas, on the significant rehabilitation of the British economy:

One of the principal instrumentalities in improving their industrial and scientific economic position is their parliamentary and scientific committee, which in itself is an unofficial partnership of members of the houses of lords and of commons on the one hand and members of the national

scientific and engineering institutions and of recognized research organizations and bodies on the other.

This noted American gives that committee considerable credit for the very excellent recovery Britain has made since world war II. Of course in the United Kingdom there is a great and long tradition of leadership in thought and science by parliamentarians. As a matter of fact many people in Britain whom we think of primarily as great thinkers and scientists have looked upon themselves as primarily parliamentarians. In that group there would be such men as Francis Bacon, Sir John Hawkins and Sir Isaac Newton. In their day they looked upon themselves as parliamentarians. Their scientific effort was a sideline with them. The most important of these men was, of course, Francis Bacon, for he started the trend of thought out of which our scientific research has developed. It was he perhaps more than any other individual who set western civilization on the road towards physical research. He had this to say about himself:

I found that I was fitted for nothing so well as for the study of truth;—

After all, that is what science is. It is just the search for the actual truths of nature.

—as having a mind nimble and versatile enough to catch the resemblances of things, which is the chief point, and at the same time steady enough to fix and distinguish their subtler differences; as being gifted by nature with desire to seek, patience to doubt, fondness to meditate, slowness to assert, readiness to consider, carefulness to dispose and set in order; and as being a man that neither affects what is new nor admits what is old, and that hates every kind of imposture. So I thought my nature had a kind of familiarity and relation with truth.

As a result of the philosophy of Francis Bacon, in the succeeding years the royal society was formed and out of it grew much of the scientific progress which took place in the United Kingdom at later times. In Bacon's own words, he "rang the bell which called the wits together." I feel that is perhaps what Canada needs at the present time as far as fundamental research is concerned. It needs some spark to gather the wits together.

I do not want to bore the committee with any review of research in Canada as it has been sponsored by this government and other governments except to say that the necessity for research on an organized national level was recognized during the first world war when the national research council was first set up. There is a very interesting debate which anyone can read that took place on that occasion. I think it was Sir George Foster and Sir Wilfrid Laurier who were the chief speakers at that time. They recognized that Germany had reached its pre-eminent