

Supply—Trade and Commerce

position in the field of manufacturing and world trade, as well as in the arts of war, because of the scientific research that had been pressed forward in previous years.

Many people who take a cursory look at the situation imagine that wars are a great stimulus to research. They are, of course, in the field of applied science. But in that regard it should be remembered that pure science is neglected during wartime. It is well for us on this continent to remember that many of our great achievements in applied science were made possible by pure research in other parts of the world, especially in Europe. This applies to such things as atomic energy, and many other fields of endeavour. We have not a very proud record so far as applied science is concerned, and I have a feeling that there is a great tendency for the demands of applied science to detract from the interest in, and the funds available for, pure science.

In that connection, I should like to quote briefly from a book written by Mr. Eggleston, called "Scientists at War", in reference to Canada.

The Chairman: I wonder if the hon. member considers that this general type of speech is appropriate to an item of this kind. May I point out to the hon. member that we are dealing with resolution 284 which involves a vote for the salaries and other expenses in connection with the national research council of over \$14 million. Standing order No. 58, subsection 2, says that speeches in committee of the whole must be strictly relevant to the item under consideration. I believe the hon. member will agree that I have not risen until he has had ample time to lay the groundwork for any remarks he has to make which are strictly relevant to this item. I would ask his co-operation in dealing with the item itself, rather than making general remarks which I feel most members of the committee believe could be more appropriately made on another occasion.

Mr. MacLean: I do not wish to transgress the rules of the committee, but I have made these remarks because I felt they were relevant to this problem. While I have no criticism whatever of the work being carried out by the national research council, I feel that it is applied usefully in one field, but there is another field for which some research organization of this government should be responsible that is being neglected. I know of no other place where I might discuss the subject. In any case, my remarks are going to be very brief.

I am endeavouring to point out that the very activities which are carried on by the

[Mr. MacLean.]

money this vote provides make it very difficult for other institutions in Canada to compete for top grade scientists and for facilities in this field. In many cases our universities would like perhaps to extend their efforts so far as pure research is concerned, but their facilities are being used for applied science. Many of our university graduates are immediately absorbed into the fields of applied science, because of the cold war, and of course, in the past, because of world war II. I am merely making the suggestion that more attention should be given to the question of pure science.

There is a quotation here, if I may be excused for using it, that is very apt.

The Chairman: I wonder if the hon. member would assure me, before reading the quotation, that it has some bearing on this vote which, as I say, deals directly with salaries and other expenses of the national research council.

Mr. MacLean: Yes, I think it has. This is a quotation from Dr. Mackenzie, who was at one time the president of the national research council. He said:

War, in its technical aspects, is simply industry functioning at a feverish tempo. But much of this gain is at the expense of fundamental research. Universities are ruthlessly raided in wartime; their wisest teachers and most ingenious investigators are conscripted for applied research. Young scientists are shifted from the laboratory to the fighting fronts. War is a sterilizing influence in science; the amount of new fundamental knowledge uncovered anywhere between 1939 and 1945 was almost negligible compared with that of any other six years of this century.

At the present time, we are still in a cold war and the accent is, by the very nature of things, on applied science. By that very fact we are, as it were, grinding the seed of our future crops so far as scientific progress is concerned.

In the past Canada has not had a very proud record so far as fundamental research is concerned. So far as I know there has been only one Nobel prize won by a Canadian. I believe there was one won by an American who was born in Canada. I believe that additional efforts should be made, although a fine effort is being made by the national research council, to educate young scientists and try to attract them to positions in this country.

It is a very dangerous thing if we lose a lot of our scientific brains to other countries. There is a great loss of our best minds to other countries, especially to the United States, and the efforts which the national research council is making to retain these young scientists in Canada are very commendable. Of course, there are exceptions to