

matter should not be dropped, but that further investigation should be made, because new developments are taking place all the time with which we should keep in touch. There is something to be said for the production of butadiene rubber from grain alcohol, especially when we take into consideration the cost of the plant itself. As I understand it, a plant for the production of rubber from grain alcohol can be built considerably cheaper than one using the petroleum process. From conversations I had with officers of the national research laboratories I understand they are constructing a pilot plant which will use grain alcohol. I hope the matter will not be dropped.

Mr. PERLEY: I suggest to hon. members who are not members of the agriculture committee that they study the reports of proceedings of that committee, particularly for the last five sittings, and the last day or two especially, when we had Dr. Archibald before us with reference to the experimental work now being carried on. They will find in those reports much useful information. It is impossible of course for members of the house to keep track of everything that goes on in the committee, but I would especially commend the reports of the agriculture committee for the last few days.

With regard to this particular item, I think a useful purpose is being served by this expenditure, and I hope that the minister will have investigations made into the production of alcohol from wheat, for instance, and that much of the investigational and research work be carried on in the west. The farm at Indian Head is suitable for very much of this work and a lot of it could be done there. If I had anything to complain of it would be that this vote is not sufficient. In the last two or three years especially it has been found necessary for us to develop all our resources of every kind, agriculture and otherwise, and we cannot emphasize too strongly the importance of the research work being done by the experimental farms. I would be in favour of increasing this vote.

Mr. SENN: I should like to supplement what the hon. member for Qu'Appelle has said about the excellent information we received in the agriculture committee from Doctor Archibald. Undoubtedly they are doing work, particularly in the research field, and the kind of research that is being done is very much worth while. It concerns itself largely with production and processing, however, and it seems to me that there is another kind of research which might be undertaken, and that is the finding of new uses and new methods of processing our farm

[Mr. Wright.]

products, particularly the by-products of the farm. That might come more properly under industrial research, but it seems to me it is one of the live questions to-day in Canada. Quite a few farm products are being utilized in different directions, mostly for food, but for other purposes as well, and I think still other uses could be found, particularly for the by-products of the farm. There is a good deal of waste in farm by-products at the present time. New uses might be found for a good deal of straw, corn stalks, and a number of other things which would be of advantage to us industrially as well as supplementing the income of the farm. I do not suppose the Department of Agriculture or the experimental farms can very well deal with matters of that kind, but we have in Canada what is known as the national chemurgic committee, which is doing valuable work and is being fostered and assisted by chambers of commerce and similar bodies. I think the time has come from the point of view of agriculture when government assistance should be given to that committee to assist it in trying to find new uses for the by-products of the farm. I leave the suggestion with the minister, and I am sure that if he studies it carefully he will agree that it would be very much worth while.

Mr. FAIR: May I ask the minister whether the figures supplied by the Department of Munitions and Supply as to the cost of producing alcohol from petroleum products were based on experiments made in the United States or in Canada?

Mr. GARDINER: I am afraid the hon. member will have to ask the minister himself when he comes back before the committee. I have no information as to what those figures are based on.

Mr. HATFIELD: I would like to see research work carried on in regard to agricultural products by the experimental farms, entirely outside of the national research council. I believe they are the ones to carry on this work. We are bringing into this country millions of dollars' worth of ethyl lead to bring up the octane rating of our gasoline, while as a matter of fact, alcohol made from wheat would answer the same purpose. I think there should be a pilot plant built in western Canada or at the central experimental farm to carry on experiments in the use of western low grade wheat and low grades of starch for power alcohol.

Mr. FRASER (Peterborough West): I understand that a ten per cent mixture of alcohol will jump the octane rating of gasoline nine per cent.