

Mr. MOTHERWELL: We are never at a loss to find some kind of insect life about us. I am sure after the brown-tail moth is done with, it will be the red-tail moth or something else.

Mr. HANSON: That may be an answer.

Mr. CAMPBELL: I notice the amount spent under this head in 1922 was only \$182,000. Last year it was \$214,000. Could the minister give us some information as to this.

Mr. MOTHERWELL: Because of the increase in insect ravages, all over the Dominion practically. There was a series of very dry years in the West—that is in the southern part of the West—which stimulated interest in these invasions over many parts of Canada. What with the bud worm, the brown-tail moth and the grasshopper there was a demand for increased activities, just as there is to-day for more extensive research work in connection with rust and other fungus diseases; and it is in response to that request that a greater expenditure is necessary to-day than formerly. I do not know that the vote should not have been increased this year, but we have kept it at the same figure in the hope that we may be able to carry on with the expenditure proposed.

Mr. MILLAR: Does the appropriation for the fighting of rust come under this head?

Mr. MOTHERWELL: This item has two sub-divisions, one with reference to fungus diseases, and the other, insect diseases. The insect diseases come under Mr. Gibson while the fungus diseases are looked after by Dr. Gussow, and that includes the rust. The principal activity under Dr. Gussow is the certification of seed potatoes. There are a large number of inspectors looking after that work, which has become of much importance especially in the Maritime provinces. Two inspections are necessary during the growing period, one after the potatoes are dug, and another before they are certified. After the potatoes are certified they are worth about half again as much as commercial potatoes. The work in which my hon. friend (Mr. Millar) is more concerned is the investigation of rust. The federal department under Dr. Gussow has been working with the provincial agricultural college authorities at both Winnipeg and Saskatoon. We supply the staff and the provincial authorities provide the ground in which to carry on experiments and to sow the grain, in addition to the greenhouses in which to conduct indoor investigational work. We have been making progress, and as the leader of the opposition has suggested, we are

working to some extent in co-operation with the United States authorities in the matter of rust investigation. The people of the United States are just as much interested as we are in this matter, and perhaps more so. Similarly we are co-operating with the provincial authorities. I do not know that this is entirely the best way of dealing with the matter because sometimes our activities are somewhat circumscribed by the requirements of the provinces. But taking everything into consideration I think we have possibly secured more information during the last ten years with respect to this rust question than has been available in any part of the world previously. All the results achieved by research work in years gone by have not been equal in importance to the discoveries that have been made in this direction in the last eight or ten years. I am of the opinion, however, that if we in this generation are to reap any benefit from this work it will have to be speeded up, for there is a great deal still to be learned. The authorities in Dakota have made a valuable discovery at the experimental farm there in connection with Kota wheat; but inasmuch as that species does not resist all the different varieties of rust, and as it is not definitely known yet whether it possesses the necessary qualities from the standpoint of milling that make our wheat acceptable in the British market, there is a great deal of work ahead of us still before we can secure a variety of wheat containing all the characteristics of the best grain. Kota is not a product of cross-breeding; it is a Russian wheat produced by hand selection. There is not much known about it; but, the rust having become so bad in Dakota, a great many farmers are taking the risk of growing Kota, seeing that in any case they must run some risk with other varieties. When the votes under the Public Works department come up, the question will arise as to possible extensions of laboratory space for the purpose of expediting this class of investigational work. A suggestion has been made that possibly this work might be better done if it were taken in hand by the Research Council of which Dr. Tory is president, and one advantage in handing the work over to him would be that he would be free to choose his staff, which is an important thing.

Mr. MILLAR: This is a matter of vital importance to many grain growers, because in my opinion rust has caused more damage than all other pests put together. From the research work that has been done, does it appear that the only success so far achieved has consisted in the breeding of types of grain