

friend from Three Rivers has said, we might be under the necessity of preventing the passing of an item for fear the Government would call an item in another department that had not yet been considered.

Sir GEORGE FOSTER: I think my hon. friend need have no fear that he will be ill-treated.

Administration and enforcement of the Destructive Insect and Pest Act, \$180,000.

Mr. McKENZIE: What progress is being made in the work to which this vote applies? Last summer in the Maritime Provinces we were reading about the incursion of the army worm into the province of Ontario. Has the minister been furnished with any effective means of combatting this pest?

Mr. TOLMIE: I may briefly outline the work that has been carried on under this expenditure, which is rather large. We have a staff in the field continuously at work not only on what might be called the animal insects, but also the fungous or vegetable insects. We have been dealing with the cut worm in certain sections of the country—a pest which is very destructive to field and garden crops. We have furnished farmers with a reliable remedy, based on a mixture of molasses and arsenic with some common body such as bran or other suitable material, and this has been found very effective indeed. With respect to the wire worm, we have found that it is necessary to take considerable time to study this insect as it requires about four years to complete its life history. So far we have found cultural methods most useful in dealing with this pest. In connection with the grasshopper plague which we have had in the West, we have found three particular varieties of grasshoppers doing considerable damage in the Prairie Provinces and also in the States to the south. We figure that in co-operation with the Provincial Governments we have this year saved agriculturalists in the province of Manitoba about \$17,000,000 by adopting certain combative methods for overcoming the grasshopper plague; in Saskatchewan it is estimated that 1,400,000 acres were favourably affected by our treatment; and in Alberta our operations have also been extensive during the past year. In addition to carrying on this work our department conducted a number of experiments. One was with what is known as a hopper-dozer, drawn by a team and consisting of a vessel containing coal oil and other ingredients, in which the hop-

pers are captured as the machine is drawn across the fields. This, however, was found not to be nearly so effective as some of the other methods. We also carried on tests with chlorine gas, but found it very expensive, it costing at the rate of about \$20 per acre. It has also this disadvantage that there is considerable danger in using it, and changing winds might have very disastrous results. Then, again, if the gas was heavily applied we found that it destroyed the vegetable matter which we hoped to save. The most satisfactory remedy was the baiting system, that is, where we used bran as the bait. Some of our men discovered that if 50 per cent of its bulk was made up of sawdust a considerable saving could be effected. We mixed this bait with molasses to attract the grasshoppers, and then added enough arsenic to kill them. In that way we have destroyed a very large number of these pests and found it the cheapest and most efficient system to handle. We have also, as I pointed out a moment ago, carried on a considerable amount of work in combatting the European corn borer. This parasite comes in from the United States and affects some of the districts in Ontario where corn is grown to a considerable extent. The United States Government is so impressed with the seriousness of this parasite that last year they expended \$400,000 in trying to prevent it reaching the corn belt and in stopping its ravages in those districts where it had already appeared. The fly lays its eggs on the corn plants, develops into a caterpillar and bores into the stalk of the corn and also up into the cob. We have given all the information we could in the various districts where the trouble has existed, and we have also issued 25,000 circulars dealing with the subject. We have also been dealing with the brown-tail moth, particularly in Nova Scotia and New Brunswick, with considerable success. It has been found practicable to import certain pests that prey on this particular insect. We sent men to the United States to study the work done there in that connection, and a number of these parasites were brought here and released in districts where the brown-tail moth was causing trouble. We have also been dealing lately with what is known as the apple-sucker, a parasite supposed to be recently imported from Europe. We sent out a number of men to investigate the action of the army worm. We used poisonous remedies as in the case of grasshoppers, and also advocated the ploughing and digging of