

The season of 1910 in Minnesota was the driest in the history of the white man. In Itasca Park where, in former years, the mosquitoes had been unbearable, in 1910 no mosquitoes were present, even in the usual swampy regions of the park. I give this to show how dry it was. Now, whether because of this excessive dryness or not, the Larch Sawfly larvæ did not remain on the tamaracks as long as they had in previous years, leaving while the trees still showed green. Also, the cocoons were considerably smaller than they had been in previous years. It seems, then, that the tamaracks here will have a little respite next year from the gross attacks of these pests. The other regions of infestation, according to reports received, did not manifest any such peculiarity.

PRESIDENT SANDERSON: Any discussion?

MR. HUNTER: Doctor Hewett sent us from England 340 pupæ of the Larch Sawfly, and we placed them in the ground. Some thirty of them emerged as females, and the rest either did not emerge, or were parasitized, and we got no males at all. We attached them to larch cuttings, kept them green, but were unfortunate in getting no oviposition.

Adjourned.

Afternoon Session, Thursday, December 29, 1910

The session was called to order at 1.30 p. m. and after the transaction of business the reading of papers was continued.

PRESIDENT SANDERSON: The first paper will be presented by Mr. Swenk,

A NEW SAWFLY ENEMY OF THE BULL PINE IN NEBRASKA

By MYRON H. SWENK, *Lincoln, Neb.*

[Withdrawn for publication elsewhere.]

PRESIDENT SANDERSON: Is there any discussion on this paper?

SECRETARY BURGESS: I would like to ask Mr Swenk in regard to the bacterial disease, if he finds it present where there is only a small number of caterpillars, or whether it is present only during severe outbreaks.

MR. SWENK: I think you will find some disease when caterpillars occur in small numbers but it is more common when many are present.

PRESIDENT SANDERSON: The next paper will be given by Mr. O'Kane.

CONTROL OF THE APPLE MAGGOT BY PICKING UP DROPS

By W. C. O'KANE, *New Hampshire*

The Apple Maggot, *Rhagoletis pomonella* Walsh, continues to be one of the troublesome fruit pests in the New England States and in eastern Canada. Of the apple enemies in this region it is probably the most serious, and unquestionably the most difficult for the grower to handle.

For the past year and a half the New Hampshire station has been at work on this insect. The investigation is still in progress. But some interesting facts have come to light this season.

Among these are the results of a series of experiments in the matter of control by picking up drops. Since these particular results have a definite economic bearing, they seem worth presenting in brief summarized form at this time in advance of detailed publication at a later date.

Ever since it was found out that the maggot matures in the drops, and goes from them into the ground to pass the winter, the usual advice to the grower has been to keep the drops picked up. This has been, and still appears to be, the most vulnerable point in the life round of this insect.

But what do we mean by keeping the drops cleaned up? How often must the fallen fruit be gathered? Offer this remedy to a dozen fruit growers, and they will give it half-a-dozen different interpretations. In conversation with, and reports from, many growers, I have found that some of them considered that they were keeping the drops picked up if they cleaned up the orchard once or twice in a season; others rejected the remedy because they inferred that the scheme involved a cleaning up once or twice a day.

It has not been possible to offer the grower specific instructions, for there are no records on which to base a definite program.

It is quite conceivable that in a given case a remedy which required going over the orchard daily would be impracticable and uneconomic, while a clean up once a week, for example, if this would suffice, would easily be managed.

Our plans for the past season, therefore, in our work on the maggot, included a rather comprehensive series of experiments designed to determine definitely how often the drops must be picked up; or, in other words, how soon after the apple falls the maggots leave it to enter the ground.