

nip the foliage as it comes on. After the foliage and blossoms appear, then the insects pass along on the under side of the leaf, puncturing it, drawing themselves out of their own case, and eating along the membrane of the leaf between the upper and the under coverings; and that is where the difficulty in controlling them lies. They only attack a very small outer portion of the leaf, and that is on the under side, and then they eat along the under surface. They go on eating at the leaf till the first of July, when they appear as a fly or moth again for the August egg, and the history goes round again.

Professor CRAIG: I would like to bear testimony to the good work Mr. Jones has done in the matter of the Case Bearer. It is not in my department, but I happen to know that it is through his good offices and the intelligent and persevering way in which he has carried on experiments under Mr. Fletcher's direction that the solution of the best remedy for this insect has been brought to a successful issue. Mr. Fletcher has given me a memorandum to hand to Mr. Jones on the subject, but I see that it covers practically the ground that Mr. Jones has told you, with, I think, the sole exception that in the first spraying with kerosene emulsion Mr. Fletcher recommends using that mixture diluted at the rate of one to five instead of one to nine, which is the ordinary strength, that is, if you use it before the foliage, and Mr. Fletcher is of opinion that it is advisable to do that. The ordinary Riley-Hubbard mixture is diluted one to nine, and Mr. Fletcher recommends one to five.

Mr. JONES: Though I have not seen Mr. Fletcher's report, I judge from Prof. Craig's remarks that I was to add one more spraying to my present list, making it seven instead of six, because we could not do very well without spraying No. 3—that is, spraying just before the blossom opens. That is of great advantage in controlling the insect. If we have to spray with kerosene emulsion one to five that would be the seventh spraying merely.

Professor CRAIG: No; I think it was to take the place of one of the other sprayings.

Mr. JONES: Take the place of the copper sulphate spraying in the first place?

Professor CRAIG: I should think so, although it is not expressly stated.

Mr. JONES: I may say that I did the last spraying under the belief that the leaf has served its function as lungs to the tree, and it is ready to drop at any time, so if there is any injury to the leaf at that time it is no injury to the tree. The leaf has served its function by the first of October.

Mr. ORR: Would there be any danger of the emulsion affecting the trees injuriously?

Mr. JONES: No. I was able to use the emulsion without injury, and Mr. Guinard, Mr. Fletcher's assistant, has borne me out in that more than once.

The SECRETARY: If applied too freely there is danger in the use of pure kerosene. In destroying the bark louse I used kerosene very freely, and as it was a tree I could experiment on I smothered it with kerosene and applied it two or three times, and the bark shuffled off entirely; so I think it is possible to even destroy the bark itself.

Mr. MCNEILL: The necessity of careful observation in this connection is shown by the fact that Prof. Craig noted some insect attacking the leaf of the tree somewhat similar to the Case Bearer, and he drew the attention of Prof. Fletcher, who wrote me asking me to make some notes upon it. I looked at some trees I had and found to my amazement that there was scarcely a perfect leaf on the tree—that they were burrowed much in the same way as this Cigar Case insect—and I had never noticed it. It emphasizes the necessity of fruit growers being alert in the matter of observation.

Professor CRAIG: That insect Mr. McNeill refers to is the Leaf Sewer.