A [illegible] Method for the
[illegible] of [illegible] (Lymantria dispar L.)
Based on Egg Mass Counts

This insect has one generation a year. It overwinters in the egg stage. Eggs are laid in masses of 100 to 350 eggs. The egg mass completely encircles a twig on the outer portion of a branch. Eggs may be found between August and March.

A method of counting egg masses on sample twigs has been devised which predicts the degree of defoliation to be expected in the spring. Control programs can be based on the expected defoliation.

The plan applies to sugar maple stands in the Northeast.

The procedure for sampling is as follows:

1. Select a stand of trees that is mostly sugar maple. The stand should be at least two acres.

2. Choose 5 sugar maples along roads or open areas with full crowns. The five trees may be close to each other but not touching. With a pole pruner reach into the crown of the first tree as far as the pruner will permit and clip five 30 inch twigs.

3. Count the egg masses on the first twig. If there are less than 8 egg masses on the first twig, count the egg masses on the second twig and accumulate the counts as you go. If the total egg masses for the two twigs do not add to 8, then continue on to the third twig, adding the egg masses until all five twigs are searched and counted. If the total number of egg masses on the five twigs still do not total to 8, continue on to the second tree, clip five more twigs, accumulate the counts and continue on in this manner, clipping five 30 inch twigs from the remaining three trees until 8 egg masses are found. As soon as 8 egg masses are found, stop sampling and continue on to another area. 8 or more egg masses on 25 twigs will result in noticeable defoliation.

4. If the total number of egg masses found on the first group of twenty-five 30 inch twigs still do not total 8 or more, refer to the sequential table. If the total count is 3 egg masses or less, stop sampling. This means that 3 or less egg masses will result in negligible defoliation and you can proceed to another area. If, however, the total egg mass count for the 25 twigs is 4, 5, 6, or 7, the potential defoliation is still undecided and you will have to continue sampling.

5. If the count falls into this undecided category, select a sixth tree and cut five more 30 inch twigs. Count the number of egg masses on the five twigs, and add these to the total from the first 25 twigs. Now refer to the table and you will see that for a 30 twig sample you will need a maximum of 5 egg masses or a minimum of 9 egg masses before a positive category is reached and sampling ceases. If the combined count totals 6, 7, or 8 egg masses, you will have to continue sampling. Continue in this way, clipping five 30 inch twigs from additional trees

with a total of 50 twigs collected. By this time we have sufficient samples to predict defoliation and can depart from the sequential table. The following rule applies: If the total number of egg masses on fifty 30 inch twigs taken from 10 trees is 11 or less, defoliation will be negligible; if the total is 12 or more, defoliation will be noticeable.

6. Record the number of twigs clipped, the number of egg masses found, and the expected degree of defoliation in the appropriate data sheet.

7. Move to the other side of the stand and repeat the sampling.

8. Go to an area somewhere near the center and take a third set of samples for the stand. By sampling 3 different areas, it is possible to determine if the whole stand will be defoliated to the same degree, or if most of the insects will be in one part of the stand.

9. After a decision has been reached about defoliation in the first stand, go to another stand and sample it in the same manner. If populations of insects are very low, stands may be 5 miles apart. If populations are very high, stands adjoining each other should be sampled to find the limits of the infestation.

10. Give each stand a number. Record this number on a good highway map and on the record form.

Table 1

Sequential Plan for Sampling Root Caterpillar Egg Masses on Sugar Maple in the Northeast

Number of Twigs	Number to Give No Noticeable Defoliation	Total Number of Egg Masses Sample More Trees	Number to Give Noticeable Defoliation
25	3 or less	4-7	8 or more
30	5 or less	6-8	9 or more
35	6 or less	7-9	10 or more
40	7 or less	8-11	12 or more
45	8 or less	9-12	13 or more
50	9 or less	10-13	14 or more
55	11 or less	12-14	15 or more
60	12 or less	13-15	16 or more
65	13 or less	14-17	18 or more
70	14 or less	15-18	19 or more
75	15 or less	16-19	20 or more
80	16 or less	17-20	21 or more
85	18 or less	19-21	22 or more
90	19 or less	20-23	24 or more
95	20 or less	21-24	25 or more
100	21 or less	22-25	26 or more

Chances are that 1 out of 20 stands said to have no noticeable will have noticeable defoliation and that 1 out of 10 stands called "noticeable" will have no noticeable defoliation.