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# THE EUROPEAN PINE SHOOT MOTH IN INTERIOR BRITISH COLUMBIA, 1967

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# THE EUROPEAN PINE SHOOT MOTH IN INTERIOR BRITISH COLUMBIA, 1967

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## INTRODUCTION

Investigations on the status of the European pine shoot moth in the interior of British Columbia were continued in 1967. Members of the Canadian Department of Agriculture, Plant Protection Division, Penticton, and Department of Forestry and Rural Development, Forest Insect and Disease Survey, Vernon, B. C. co-operated for the third successive year in a detection survey. The survey of pine trees was intensive in nurseries, plantations and landscape projects in the Okanagan Valley and Kamloops region. Most private lots in Kamloops were examined; only randomly selected private lots were examined in the Okanagan cities.

Moth trapping for use as a possible additional detection tool was tested by members of the Forest Entomology Laboratory at Vernon. Since Pointing (1961) demonstrated that male shoot moths were attracted to caged virgin females, a pilot trial of his method was run on the grounds of the Summerland Research Station, and near Glenmore Road, at locations where pine shoot moth damage had been observed in the past.

Since the surveys presumably would not detect all pine shoot moths brought into the Interior, it was considered important to determine whether or not undetected larvae could survive the winter and thus become established.

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Ross (1966) demonstrated that at Vernon some larvae from caged parents survived the winter conditions, including a minimum of -4°F., during the 1965-66 winter. A similar trial was repeated at Vernon for the 1966-67 hibernating period. As it happened, however, the weather was milder than the preceding winter.

## METHODS

Pine Tree Survey: The survey was begun on 1 May, 1967 in the Osoyoos district and progressed northward to Kamloops. The plantations and nurseries of the Okanagan were re-examined from late in May until 15 June. Plant Protection Division devoted 67, and the Forest Insect and Disease Survey, 13 man days to this survey.

Trap Program: Codling moth traps borrowed from the Research Station at Summerland, each baited with five living virgin female shoot moths, were set up. Two traps were placed at Summerland and three near Glenmore. They were examined and replenished at five to seven day intervals with sugar solution and newly emerged moths obtained from female pupae collected in Vancouver.

Overwintering Trial: At Vernon, two sleeve cages were tied about branches of a mature ponderosa pine and a large cage was placed over six 5-7 foot tall ponderosa pine trees. Mated shoot moths from pupae collected at Vancouver were placed in the cages in June 1966 where they oviposited. Some larvae became established in the twigs. The cages were removed for the hibernating period, exposing the trees directly to the elements of the winter of 1966-67.

## RESULTS AND DISCUSSION

No European pine shoot moths were found during the survey in the Okanagan-Kamloops region. Some 4,580 pine trees on 1,085 home premises were examined once; 31,095 pine trees in nurseries and plantations were

examined at least twice, some of them three and even four times (Hamilton 1967). Although no shoot moths were seen, feeding damage considered by B. A. Sugden of the Forest Entomology Laboratory, Vernon, to be typical of this pest was observed on nine Scots pine imported from Ontario in the spring of 1966, and two small naturally grown ponderosa pine trees near the plantation along Glenmore Road.

Traps set near this plantation and at the Summerland Research Station caught no moths.

Twenty-one larvae overwintered successfully on the caged trees and branches (only one in the sleeve cages). This was to be expected, however, since the minimum winter temperature was 12°F., above last year's minimum of -4°F. when shoot moths were successfully overwintered.

An impression gained from contacts with householders and nurserymen was that radio, television and press releases during the past several years explaining the purpose of the survey have led to a general awareness of the European pine shoot moth. This may have reduced the number of infested pines brought to the Interior. Also, the reduction in the number of insects noted in 1967 may be the result of increased pruning of damaged twigs before the surveys were done, particularly by nurserymen aware of the importance of their reputation for having pest-free stock.

The recently prescribed regulations requiring fumigation of pines moved into Canada or between provinces should prevent further importation of the European pine shoot moth. But the problem for interior British Columbia will not be resolved until movement of infested trees from coastal British Columbia is halted. A well-planned educational program is needed, as well as regulations governing intra-provincial pine movement. In addition, Interior nurserymen should be encouraged to grow pine stock from seed.

Until intra-provincial movement of pines is halted, there should be an annual survey for the European pine shoot moth. For 1968 it is recommended that there be an intensive survey of nurseries and plantations in the Okanagan Valley and Kamloops region. It is suggested that at that time a random group of homeowners be queried about the source of their pine trees in order to gain information on the movement of pines from the Coast to the Interior. Finally it is recommended that a more extensive moth trapping program be considered for 1968.

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