FOREST RESEARCH LABORATORY
CANADIAN FORESTRY SERVICE
VICTORIA, BRITISH COLUMBIA

FOREST INSECT & DISEASE SURVEY

PEST LEAFLET

NO. 30

A HEMLOCK NEEDLE MINER IN BRITISH COLUMBIA

by

D. G. COLLIS

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DEPARTMENT OF FISHERIES AND FORESTRY

Introduction

A needle miner of western hemlock, Epinotia tsugana Freeman (Lepidoptera: Olethreutidae), caused serious defoliation in the Ida - Reid Lake area near Beaver Cove, northern Vancouver Island, in 1963, and heavily defoliated about 46,000 acres to the north around Quatsino Sound in 1965 - 1966. These were the first records of this pest and it is believed that unusually favorable weather conditions permitted the sudden rise from endemic to infestation levels. If these infestations had persisted for another year, significant tree mortality might have occurred. Although presumably a native insect, its obscure habit apparently prevented its detection until conditions allowed a population buildup, with resulting heavy defoliation.

Hosts and Distribution

The hemlock needle miner apparently prefers mature or overmature western hemlock and mountain hemlock, and, in infestation situations, may also attack amabilis fir and Sitka spruce.

The recorded distribution includes the northwestern portion of Vancouver Island; similar but unidentified needle mining has been noted at some localities on the mainland coast, suggesting that this insect is not restricted in distribution.

Description

Egg: Single, flattened, pearly white, turning yellowish with age. Approximately 0.6 mm in diameter.

Larva: Small brown caterpillar with a black head; up to 7 mm long.

Pupa: Brown, approximately 4 mm long, enclosed in a greyish bark or moss-encrusted cocoon.

Adult: A slender, steel-grey moth, with a wingspan of 8 - 10 mm. Fore wings and body are speckled with dark grey.

Control

Both the Ida - Reid Lake and Quatsino infestations collapsed during the late larval or pupal stages. Adverse weather may have been a major factor and parasitism was high. Insecticides suitable for defoliating insects, applied to coincide with egg hatching, would probably be effective in reducing populations. Specific recommendations would be developed for forest areas under prevailing circumstances should the need for control arise.

Additional Information

Samples of foliage containing larvae can be forwarded for identification to:

Canadian Forestry Service
Forest Insect & Disease Survey
Forest Research Laboratory
506 West Burnside Road
Victoria, B. C.

References

Condrashoff, S. F. and N. E. Alexander. 1966. Defoliation of western hemlock by an undescribed species of Epinotia. Dept. Forestry Bi-monthly Progress Rept. 22: 3.

Epinotia tsugana Freeman, a hemlock needle miner. 1, 2 and 3. Damage to western hemlock. Arrows (A) indicate larvae: arrows (B) indicate larval feeding holes in needles.

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5	Silver-spotted tiger moth
6	Cooley spruce gall aphid
7	Poplar-and-willow borer
8	Juniper webworm
9	Douglas-fir tussock moth
10	Boxelder bug
11	Fall webworm
12	Larch sawfly
13	Spruce beetle
14	Douglas-fir beetle
15	Annosus root rot in Douglas-fir and western hemlock
16	Spruce aphid
17	Tent caterpillars
18	European pine shoot moth
19	Woolly aphids on conifers
20	Engraver beetles
21	Western hemlock looper
22	Green-striped forest looper
23	Saddleback looper
24	Black-headed budworm
25	Atropellis canker of lodgepole pine
26	White pine blister rust
27	Elytroderma disease of pines
28	Needle blight on western larch
29	Some insects encountered in and near the home
30	A hemlock needle miner

Copies of these leaflets and specific information on other forest pests may be obtained by writing to:

Canadian Forestry Service
Forest Insect & Disease Survey
Forest Research Laboratory
506 West Burnside Road
Victoria, B. C.