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FOREST ENTOMOLOGY LABORATORY
FOREST INSECT AND DISEASE SURVEY

VERNON, B. C.

TREE PEST LEAFLET
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THE SPRUCE NEEDLE MINER

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The spruce needle miner, Taniva albolineana (Wft.), occurs throughout Canada on ornamental, and to a lesser extent, on native spruce trees. It is not an economically important forest insect but is of concern to owners of ornamental spruce trees.

HOST TREES

Cultivated or ornamental white, blue, Norway, Sitka, or Engelmann spruce of any size. Occurs also on spruce in natural stands.

DESCRIPTION OF INSECT

The four stages of development are: adult, egg, larva, and pupa in a cocoon.

Adult: The adults are small brown moths with buff markings on the forewings; the wing span is 1/2 inch.

Egg: The oval eggs are ridged, shiny, and opaque. When first laid they are light green, changing to yellowish-green, orange, and red as they mature.

Larva: The larvae are light green with flattened brown heads. When full grown they may attain a length of 5/16 inch.

Cocoon: The tear-drop shaped cocoons, about 3/8 inch long, are made with frass and dead needles matted together with silk webbing; the interior is lined with fine silk.

Pupa: Average length 1/4 inch. The new pupae are bright green but slowly change to a brownish-green as the adults develop.

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LIFE HISTORY

About the end of May to the middle of June from 2 to 12 eggs are deposited, overlapped like shingles, in a single row on the underside of a needle of the preceding year's growth. The eggs hatch in about two weeks and the small yellowish-green larvae bore a hole, usually into the base of the needle, and begin to feed. As many as 8 larvae may start to mine a single needle but as they grow larger they move to other needles so that eventually there is one larva per needle. During the larval period each individual consumes an average of 10 needles. The larvae spin funnel-shaped webs which hold the mined needles to the twigs. In October they stop feeding and crawl into an old mined needle to overwinter. When the warm weather returns in March the larvae resume feeding. They pupate late in April and early in May in a cocoon within the web attached to the outside of a needle, and emerge as adults during the last half of May.

DESCRIPTION OF DAMAGE

The larvae form an unsightly mat of webbed living and mined needles and frass on the twigs. Trees repeatedly infested have extensive portions of the branches in the lower crown denuded of foliage.

NATURAL CONTROL

A few species of parasites seem to provide natural control in some areas, especially a small wasp, Ascogaster sp. which is in flight during May.

CHEMICAL CONTROL

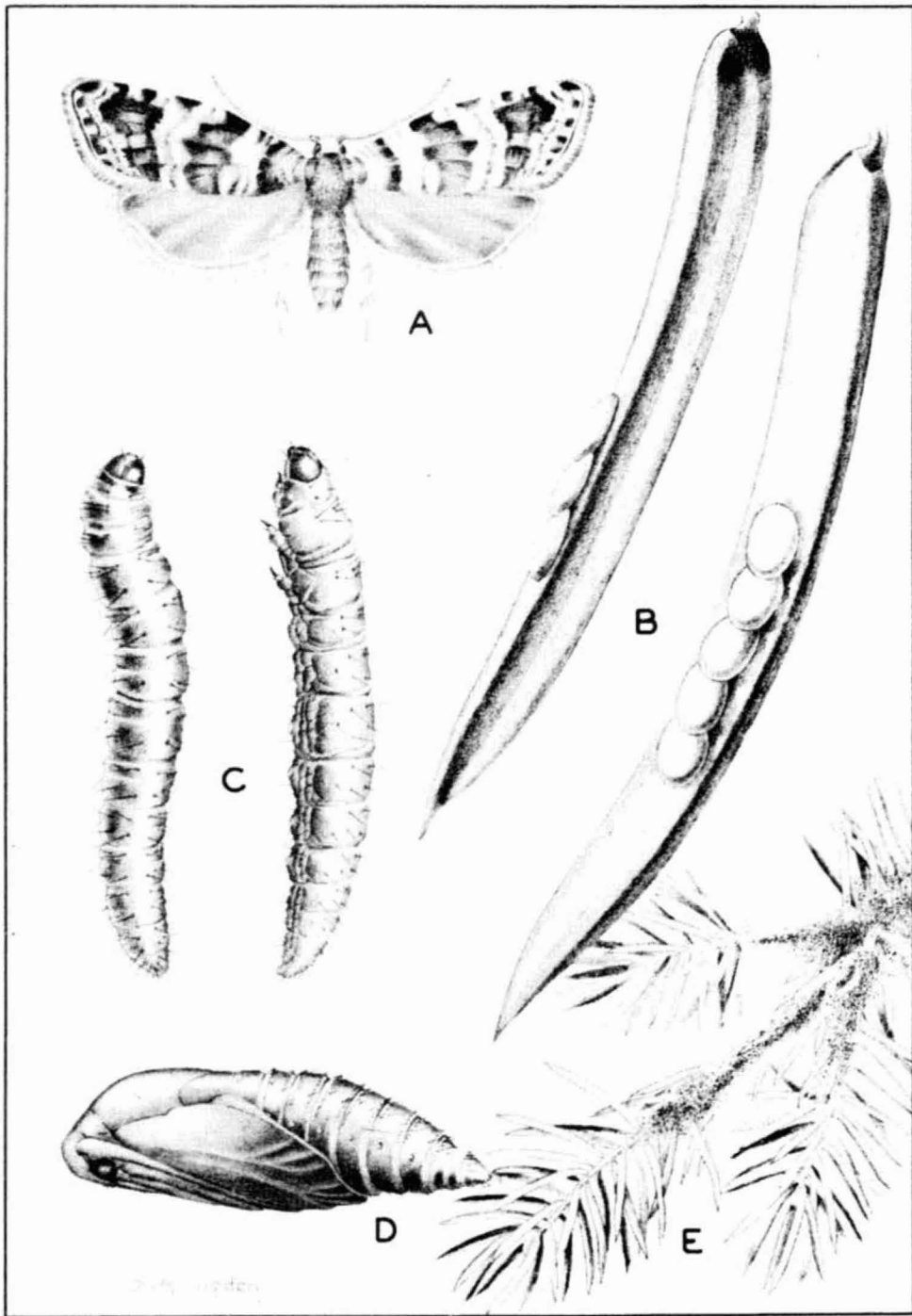
In the Okanagan, Malathion is the most frequently recommended insecticide. Use 25% wettable powder at the rate of 4 tablespoons (2 ounces) to 5 gallons of water. If feasible, hand pick the mats or nests of dead needles and burn them, then spray the trees with sufficient force to break the remaining webs about the end of May. A second application about 10 days later may be applied if necessary.

For further particulars contact one of the following:

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or

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Figs. A. to E, Spruce Needle Miner, *Taniva albolineana* (Kft.)
A, adult 6x; B, eggs on spruce needles 10x; C, larvae 10x; D, pupa
10x; E, damage.