

**Recent Outbreak of the Bruce Spanworm in Quebec.**—

The Bruce spanworm, *Operophtera bruceata* (Hulst), a defoliator seldom reported in Quebec prior to 1960 severely damaged sugar maple (*Acer saccharum* Marsh.) in eastern Quebec recently and was a cause of alarm to sugar producers. Sudden increases in the population of this pest were first noted in Portneuf County in 1962. During the next 2 years the outbreak continued to expand over a 15,000 square mile area extending from the Eastern Townships in the west to Chaleur Bay in the east. Populations began to decline in 1965 and in 1966 the insect was rare. The western half of the outbreak area was characterized by solid blocks of light to severe infestation whereas in the east the outbreak was restricted to relatively small areas because of the scarcity of the two preferred hosts: sugar maple and beech, (*Fagus grandifolia* Ehrh.).

In Quebec the life cycle of the Bruce spanworm is similar to that reported by Brown in Alberta (Can. Entomol. 94:1103-1107, 1964), except that oviposition may continue later in the season sometimes lasting until the end of November, and that hatching occurs earlier generally coinciding with the swelling of maple buds in the spring. The larvae usually feed on the underside of the leaves, eating out small areas without touching the veins. Defoliation is generally not conspicuous until populations reach a high level when the foliage becomes thin and crowns take a distinct reddish-brown hue. When feeding is completed, severely defoliated maple trees put on new foliage and crowns are usually green by mid-July. In all of several points under observation, the infestation period lasted only a few years, populations increasing very rapidly and just as suddenly collapsing.

The principal cause of population decline in the recent Quebec outbreak was due to the action of a virus disease. Some parasitism of eggs by *Telenomus* sp. and of larvae by *Horogenes* sp. as well as predation by birds were also recorded. The disease was first observed in laboratory material and later in nature by the senior author and was studied and described by Smirnof (J. Insect Pathol. 6:384-386, 1964). A gradual discoloration of the abdominal segments of the larvae and cessation of feeding are signs of virus infection. In laboratory rearings of field material collected in the opening buds on May 15, 1964, disease symptoms were first observed on May 28 and most of the larvae died within the next 2 weeks. In nature, the first diseased larvae were recorded on heavily defoliated trees in early June of the same year and 2 weeks later 95% of the larvae were infected.

Despite the high mortality in the Bruce spanworm populations reported above, most of the maple trees in the areas under observation were almost completely stripped of their foliage at the peak of the infestation. However tagged trees kept under observation in severely defoliated areas, have shown no serious after-effects.—R. Martineau and C. Monnier, Forest Research Laboratory, Quebec, P.Q.