

Biology/Phenology

Exotic Fruit Tree Pests in Whatcom County, Washington

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The Washington State Department of Agriculture (WSDA) has conducted detection surveys and other field projects for exotic pests since the mid-1980s, with funding provided by the USDA/APHIS Cooperative Agricultural Pest Survey (CAPS) program. Recent discovery of several exotic fruit tree pests in northwestern Washington prompted a 1994-1995 CAPS survey of apple trees to identify all leaf-feeding apple pests currently in Whatcom County. Additional exotic apple pest species, new to either the region or U.S., were discovered. This paper presents some brief descriptions of species detected in that project and other exotic fruit tree pest species discovered in northwest Washington since 1985.

Table 1. Exotic Fruit Tree Pests New to Northwestern Washington State, 1985 to 1995.

Green pug moth—Geometridae: *Chloroclystis rectangulata* (L.)

An early, persistent European pest of apple, pear, cherry and other fruit trees. Larvae attack buds, blossoms, and leaves from March to June. Damage to blossoms causes considerable deformation of fruit. Larvae are common in apple blossoms in Whatcom County, where it was first reared from apple trees in 1994. This pest, new to North America, was also recently detected in the northeastern U.S.

Croesia holmiana—Tortricidae: *Croesia holmiana* (L.)

A common pest of many fruit trees and ornamental plants in Europe and Asia, where it is considered a minor problem. Spring larval feeding affects only leaves. First reported in B.C. in 1977, this pest has been collected in large numbers in survey traps (for other pest species) throughout the Puget Sound area since the mid-1980s. Reared from apple trees in Whatcom County in 1994, larvae are common on apple trees in that county. This pest is not known to occur anywhere else in North America.

Apple leaf midge—Cecidomyiidae: *Dasineura mali* (Kieffer)

This apple leaf feeding gall-fly was first reported from Whatcom County in 1994 by Dr. Elizabeth Beers, who was contacted by a field consultant seeking a treatment for this unrecognized pest. Larval feeding damage from three or more generations per year is limited to new leaves, but heavy populations can reduce growth and stunt young trees. Originally from Europe, apple leaf gall midge is also found in the northeastern U.S., eastern Canada, and New Zealand. Although now common in northern Whatcom County, the 1994 discovery may be the

first documentation of this pest in western North America.

Cherry bark tortrix—Tortricidae: *Enarmonia formosana* (Scopoli)

An unusual bark-feeding European tortricid pest of many *Prunus* spp., apples, and some ornamentals. Larvae attack the bark of older trees. Branches and whole trees may be killed. Reported in B.C. in 1990, it was found in Whatcom Co. in 1991. Much of the Puget Sound area is now infested. Most older cherry trees in Whatcom County are very heavily infested, particularly grafted flowering cherry varieties. This difficult-to-control pest is also new to North America.

Green bud worm—Tortricidae: *Hedya nubiferana* (Haworth)

This European leafroller is also found in the eastern U.S. and Canada. Considered a minor pest in Europe, the literature notes the pest as sometimes abundant in unsprayed orchards. Overwintering larvae feed on opening leaf and blossom buds in spring and may also bore into and kill new branch tips. First described from B.C. in 1914, a few specimens reared from apple leaves in Whatcom County in 1994 are the first known detections in the western U.S.

European common emerald—Geometridae: *Hemithea aestivaria* (Hübner)

Overwintering larvae feed in the fall and spring on many plants, including most fruit trees in Europe where it causes minor damage. First discovered in B.C. in 1978, it was reared from apple trees in Bellingham in 1994. This pest is not known to occur anywhere else in North America.

Winter moth—Geometridae: *Operophtera brumata* (L.)

A common and destructive pest of many ornamental plants, fruit trees, and forest trees in Europe. Larvae feed on buds, leaves, and blossoms from very early spring until June. Damage to blossoms and developing fruit produces a high percentage of distorted fruit. Persistent and extensive damage has been reported from introduced populations in eastern Canada, Oregon, and B.C. Apple, cherry, maple, and many ornamental trees have been heavily defoliated in areas of Whatcom County since discovery of the pest there in the mid-1980s.

Dark fruit tree tortrix—Tortricidae: *Pandemis heparana* (Denis & Schiff.)

Larvae feed on many trees and shrubs, including apple, pear, plum, and some berries. Typical leafroller damage in spring mostly affects leaves, but flower and fruit feeding can cause loss or blemishes. Common in Europe where it is considered a minor pest, it was found in B.C. in 1978 and reared from apple trees in Whatcom County in 1994. Recently discovered in museum collections in northeastern states, it is probably also established there.

Barred fruit tree tortrix—Tortricidae: *Pandemis cerasana* (Hübner)

Another European species of *Pandemis*, similar in appearance and biology to *P. heparana*, but considered more of an economic pest. Blossom and fruitlet damage from large populations produces blemished fruit of apple, pear, cherry, plum, and other fruit crops in Europe. Also found in B.C. in 1978 and reared from apple trees in Whatcom County in 1994. This species is not known to occur anywhere else in North America.

Lesser bud-moth—Gelechiidae: *Recurvaria nanella* (Hübner)

Larvae of this pest feed on leaves and blossoms of apple, plum, and many other fruit trees in early spring. Originally from Europe, where it is a destructive pest, this pest was also introduced into northeastern U.S. in the late 1700s. It is now common in apple buds before bloom in much of the East. It was first recorded as a pest of apples in B.C. in the 1950s. Specimens reared from apple leaves in Bellingham in 1994 may be the first from the western U.S.

Swammerdamia pelicaria—Yponomeutidae: *Swammerdamia pelicaria* (Retz., 1783)

The distinctive larvae of this pest feed on the upper surface of apple and hawthorn leaves in early and late summer. It is native to Europe and Asia, where it is not considered an important pest. This pest was probably first recorded in Bellingham in 1942 and later in B.C. in 1979, although changes in species name confuse the first records. It is included in this list of recent discoveries because, other than the single 1942 collection record, no other information exists on its presence or populations in Washington. It was reared from apples leaves in Whatcom County in 1994 where larvae are now common. The WA/B.C. population of this pest is the only known infestation in North America.

Apple ermine moth—Yponomeutidae: *Yponomeuta malinellus* (Zeller)

Web spinning larvae feed on apple leaves from April to June. Fruit may also be deformed where it comes in contact with larval webs. Backyard apple trees in some areas of Whatcom County were completely defoliated by this pest in the late 1980s. First discovered in B.C., Canada, in 1981, this European pest is not found anywhere else in North America. Since discovery in Whatcom County in 1985, it has spread throughout all of Washington and into Oregon. Introduced biological control agents are now established in several western Washington counties.

Cherry ermine moth—Yponomeutidae: *Yponomeuta padella* (L.)

European cousin of the apple ermine moth, the larvae feed on more hosts, including most *Prunus* spp., hawthorn, mountain ash, and serviceberry. First discovered in B.C. in 1992 and confirmed in Whatcom County in 1994, this species is new to North America. A 1995 survey found small numbers of the pest as far south as Lewis Co., but not in eastern Washington.
