



## **PEAR PSYLLA**

The pear psylla, *Psylla pyricola*, is an introduced pest of pears in the United States. It was first found in Massachusetts in 1832, and had spread into Washington by 1940. Since that time it has been a serious pest of pears throughout the state and in all other pear-growing areas in the Northwest.

### **Host Ranges**

Pears are the only plant on which the insect can complete development. Occasionally the adult psylla and the egg stage can be found on other hosts.

### **Appearance and Seasonal Development**

The pear psylla passes through three distinct stages during its development: the adult, the egg, and the nymph.

The winter is passed in the adult stage. Adults have dark bodies with clear wings held rooflike over the abdomen (back body portion) (Fig. 1). At this stage they resemble small cicadas. They are sometimes called jumping plant lice as they often jump or fly away quickly. Adults occur in two forms: a tan to light brown summer form that produces the second generation the same year. The second generation form is dark brown to black. This form spends the winter under bark and in other hiding places. It does not lay eggs until the following spring. The summer adult is slightly larger (1/13-inch long) than the winter adult (1/12-inch long).

The first eggs are deposited as the buds begin to swell in the early spring. They are found on the twigs around the base of the buds and in the smaller crotches. After the buds open, the eggs are deposited along the midribs and petioles of

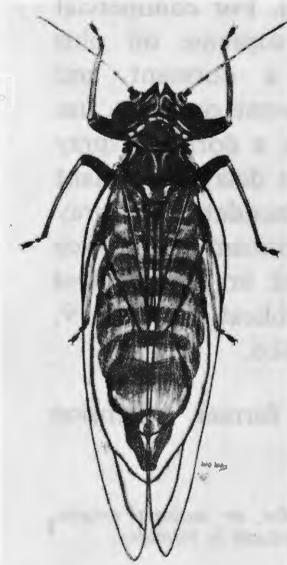


Fig. 1. Adult pear psylla.



Fig. 2. Droplets of honeydew on underside of pear leaf.



Fig. 3. Honeydew-scarred pear.



the developing leaves and on the stems and sepals of the blossoms. When depositing an egg, the female makes a small hole in the host plant with her ovipositor and cements the egg securely. The elongate, creamy-white egg is barely visible to the naked eye and changes to yellow or orange just before hatching. Each overwintering female deposits about 500 eggs. Egg deposition continues until about two to three weeks after petal fall. Eggs hatch in 14-30 days. When the trees reach full bloom, many small, yellow nymphs with black antennae and red eyes can be found on the stems and undersides of leaves. The nymphs go through five stages before maturing in about a month. The nymphs tend to stay in one place, sometimes in the same honeydew droplet. The fourth and fifth stage nymphs are darker than the first three. Their color is bluish green to brown. There are normally two to three generations of the summer form before winter adults appear in the fall.

### Injury to Pear

Psylla feed by sucking the plant juices from their host. Pear psylla can cause several types of injury to pear, including secretion of honeydew and injection of toxin and possible transmission of "pear decline." Honeydew is excreted by the nymphs while feeding. This often runs off and drops down over the leaves and fruit (Fig. 2), killing leaf tissue and russetting fruit (Fig. 3). A sooty mold usually develops in the honeydew and blackens the affected tissue. General feeding of psylla by large populations can lead to reduced vigor, fruit loss, and poor fruit set. This condition is often called "psylla shock." While feeding, the mouth parts inject a "saliva" into the plant. This saliva contains a toxin that interferes with food translocation in susceptible pears. "Pear decline," a disease that shows the

outward symptoms of slow or, in some cases, rapid death of the tree, is transmitted by the psylla through the salivary secretions. This problem has been partially remedied through the use of resistant rootstocks.

### Control

**Natural Enemies:** Several predators and at least one parasite are known to attack pear psylla in Washington. However, they do not exert a significant influence on psylla populations. Some of the common predators are anthocorid bugs, predacious lygus bugs, lacewing flies and larvae, and ladybird beetles. These predators feed on the eggs and nymphs of the psylla. They are general feeders and will attack many other insects in the orchard. The chalcid wasp, *Trechnites insidiosus*, is the only significant parasite of the pear psylla in the United States. Other introduced predators are being studied at the present time.

**Chemicals:** The pear psylla prefers cool weather and succulent foliage; populations build up most rapidly during the spring and early summer. If not controlled, injurious populations will persist throughout the season.

In most pear orchards in Washington, a complete seasonal spray program, beginning with a dormant and a delayed-dormant or prepink spray is necessary for control. For commercial orchards, use superior or supreme oil plus perthane or thiodan as a dormant and delayed-dormant spray. For home orchards, use superior oil plus diazinon as a dormant spray and perthane or thiodan as a delayed-dormant spray. For specific recommendations, spray programs, and additional summer sprays, see your county Extension agent or pest control consultant and Extension publications EB 419, EM 3069, EM 3434, and XC 516.

Prepared by Arthur H. Retan, Extension entomologist and James Fisher, former Extension entomology assistant, Washington State University, Pullman.

Assistance from Washington State University is available to all persons, without regard to race, color, or national origin. Trade names have been used to simplify the presentation of information. No endorsement of products is intended.



Use pesticides with care. Read the label and follow its directions. Never smoke while using pesticides and avoid breathing the spray or dust. Wear natural rubber gloves when handling pesticides. Wash hands and face carefully with soap and water after applying. If insecticides are spilled on skin or clothing, remove contaminated clothing and wash skin thoroughly. Store pesticides in their original containers and be sure labels remain on the containers. Keep containers away from food or feed and out of reach of children or irresponsible persons.