

## Thresholds/Monitoring/Sampling

### Faunistic Survey of Insects Associated with Prunus Trees in Western Oregon

Richard A. Worth and Barry B. Bai  
Oregon Department of Agriculture Plant Division, Salem, OR

*Keywords:* cherry ermine moth, cherry bark tortrix, oriental fruit moth, *Pandemis heparana*, *Curculio occidentalis*, cherry, plum, peach

Surveys of fruit trees are helpful for detecting newly introduced pests, monitoring levels of established pests, and determining the general insect fauna associated with a given commodity.

### Methods

A survey of insects associated with Prunus trees (cherry, plum, peach) was conducted from 1996 through 1998 in northwestern Oregon centered around the Willamette Valley. Sites were chosen from abandoned orchards, roadside groups of trees, parks, and experimental orchards. Selected sites were visited every 3 to 4 weeks. Insects from trees were sampled with a beating sheet and were also taken from sticky traps set in Prunus trees during the regular pest detection survey. Trap types included Cherry Ermine Moth (CEM), Cherry Bark Tortrix (CBT), Oriental Fruit Moth (OFM), and *Pandemis heparana* (PH). Adult specimens of most orders were collected from the sheet or removed from traps, while larval lepidoptera were reared to adults in the lab. Specimens in traps were removed only if in good condition. The survey focused on those orders likely to have species that are pests or predators including Coleoptera, Dermaptera, Diptera, Hemiptera, Homoptera, Hymenoptera, Lepidoptera, Neuroptera, Odonata and Orthoptera. An emphasis was placed on Lepidoptera because this order contains high numbers of pests, and trapping efforts in fruit trees have recently focused on this important group.

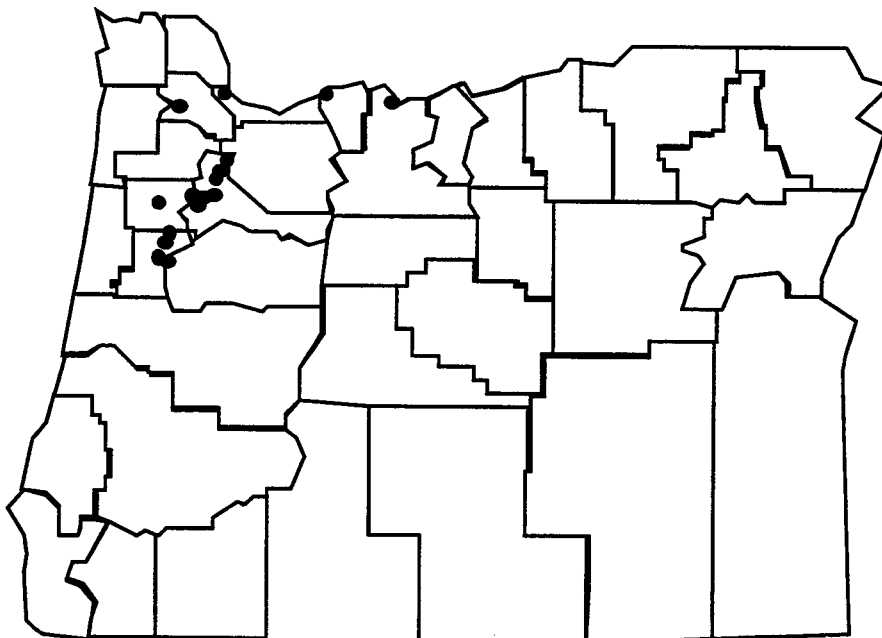
### Results and Discussion

Much of the data for the 1996 to 1998 seasons is still being processed and there are many more specimens to be identified. The initial results are presented here. Only the Coleoptera, Hemiptera and Lepidoptera are discussed because most of the specimens that have been identified so far are in these three orders. Table 1 lists the number of identified species in a given family for each order. To date, the Coleoptera consist of 34 species in 9 families, the Hemiptera have 55 species in 13 families and the Lepidoptera consist of 38 species in 12 families. Several of the identified Hemipterans are predatory, some are introduced and a few are both. Nearly half of the most represented family, Miridae, are predatory. The family Curculionidae contained the greatest number of beetle species including one specific oak feeder, *Curculio occidentalis*. Known Prunus feeders include one curculionid, one scolytid and two buprestids. The noctuidae is the most represented Lepidopteran family. A few are not Prunus feeders and one is specifically a grass feeder.

Rearing efforts of the survey produced not only good adult specimens but also had the following benefits. First, larvae feeding on a plant can be positively linked to that host. Second, photographing larvae can give a visual record to be paired with the adults after emergence. In contrast, adults collected from a tree may be incidental, having fed from a different host nearby. Trap-collected specimens may be lured from surrounding areas, and lures can have cross-attractance among species that feed on other hosts. Furthermore, specimens from traps are often too gooey to identify.

**Table 1.** Number of identified species in the given families of each order.

Lepidoptera		Coleoptera		Hemiptera	
Family	No. of species	Family	No. of species	Family	No. of species
Arctiidae	1	Buprestidae	3	Acanthosomatidae	1
Geometridae	6	Cantharidae	5	Anthocoridae	3
Hesperiidae	1	Cerambycidae	5	Berytidae	1
Lasiocampidae	1	Chrysomelidae	1	Largidae	1
Lymantriidae	2	Cleridae	2	Lygaeidae	5
Noctuidae	15	Curculionidae	15	Miridae	18
Notodontidae	1	Elateridae	1	Nabidae	3
Pyralidae	1	Meloidae	1	Pentatomidae	15
Satyridae	1	Scolytidae	1	Reduviidae	1
Thyatiridae	3			Rhopalidae	1
Tortricidae	6			Scutelleridae	1
				Tingidae	3
Totals					
No. families	No. of species	No. families	No. of species	No. families	No. of species
11	38	9	34	12	53



**Figure 1.** Distribution of *Prunus* survey sites in northwest Oregon.