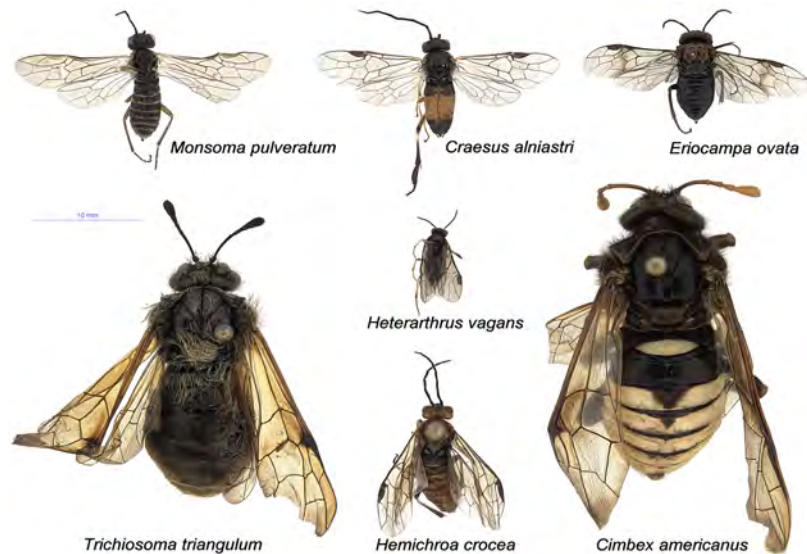


# COMMON PACIFIC NORTHWEST ALDER-FEEDING SAWFLIES

Red alder (*Alnus rubra*) has become an important timber species in the Pacific Northwest states. Alder is valuable for non-structural and secondary wood products, such as furniture or interior paneling, and is also used in biomass production. With the increase in alder production in the region, it is important for landowners and foresters to understand insect pests of alder, including defoliators. One group of common alder defoliators are the sawflies (Hymenoptera: Symphyta). Sawflies are an ancient lineage of predominantly plant-feeding wasps. Many species of native and introduced sawfly feed upon alders, causing readily visible damage, and some populations could infrequently reach pest status. This guide lists some alder feeding sawflies common in the Pacific Northwest States, with adult identification tips and descriptions.



The adults stages of alder-feeding sawflies vary greatly in size and color. While larvae of these species are associated with alder, adults may be found on other plant species or elsewhere away from their host trees.

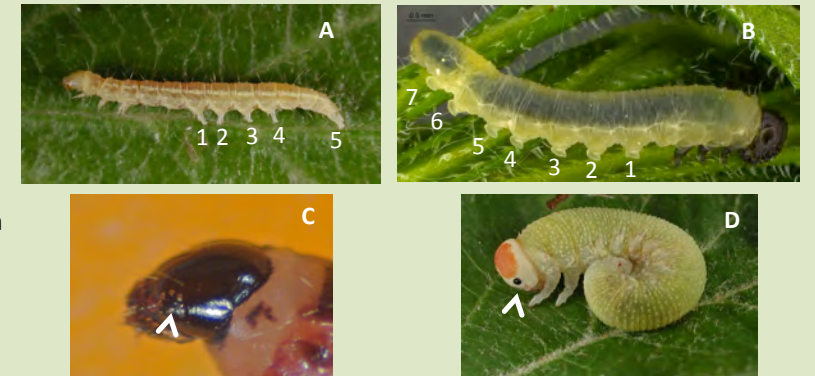
# A pocket identification guide



## Sawfly Basics

Sawflies are classified in the order Hymenoptera, which also includes wasps, bees, and ants. Sawflies differ from many other Hymenoptera in that most are plant feeders as larvae. Sawflies also look much different than most other Hymenoptera; sawfly larvae are eruciform, which means caterpillar-like, and closely resemble moth and butterfly larvae. There are several external differences that can be used to distinguish the two kinds of animals, including the lack of tiny hooks (crochets) on the spongy abdominal prolegs of sawflies; moth and butterfly larvae have crochets on the bottom of their prolegs. This character is best seen with a hand lens or microscope. Two more visible characters are:

- Caterpillars have five or fewer pair of prolegs (A), while sawflies have six or more (B).
- Caterpillars usually have several stemmata or simple eyes on each side of the head (C), while sawflies have only one (D).



pronotum and mesonotum



antennae      mesopleuron      saw

Adult sawflies associated with alder have two pairs of veined wings and chewing mouthparts. Females have a saw-like ovipositor used to insert and lay eggs in host plants - hence the name "sawfly". Features of different regions of the body can be helpful for identifying species; a few significant areas are indicated at left.

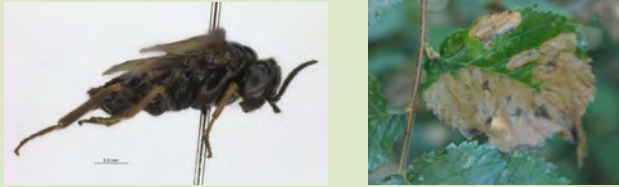
Sawflies damage alders by feeding on the leaves. External defoliation and leaf mining are the typical, visible signs of feeding damage. E, F) *Monsoma pulveratum* feeding damage. G) *Heterarthrus vagans* mine and circular cocoons. H) Gregarious *Hemichroa crocea* larvae.



## Common Introduced Species

### *Fenusa dohrnii* (European Alder Leafminer)

This tiny (~4mm long) leaf-mining sawfly is mostly black, with pale legs. The extensive leaf mines can be seen on alder throughout the summer, and can frequently fill the entire leaf.

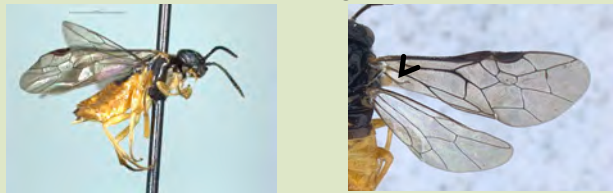


### *Heterarthrus vagans*

This recently detected species is a leaf miner similar to *Fenusa dohrnii*. Distinctive circular cocoons in leaves are diagnostic late in the season (previous page). The ~5mm long adults have an orange abdomen and legs, and a black mesopleuron.



*Halidamia affinis* (below) is often captured on sticky traps or in Malaise traps. It is superficially similar to *H. vagans*, but feeds on *Gallium* sp. They can be distinguished by the incomplete club-shaped basal vein on the front wing and well-defined soft area underneath the terminal antennal segments.



### *Craesus alniastri*



Very little is known about this species in North America. It is widespread in the PNW, and distinctive due to its enlarged tarsi and reddish abdomen. Larvae are communal feeders.

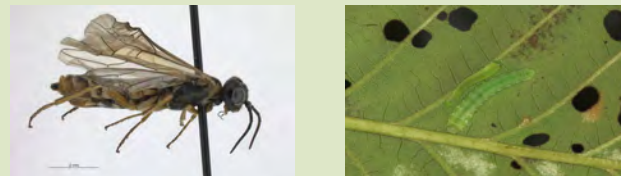
### *Eriocampa ovata* (Woolly Alder Sawfly)

This species is readily visible as larvae feeding on alder leaves. The waxy outer coating of larval stages is distinctive. Adults are relatively stout, ~7 mm long with a bright orange pro- and mesonotum, and large distinctive mesopleural punctures.



### *Monsoma pulveratum*

The “green alder sawfly” has caused massive alder defoliation in Alaska. The species is wide-spread in the Pacific Northwest., where abundant larvae cause shot-hole damage. Present from April-July, the orange legs and orange and white-margined abdomen distinguish adults. Adults are ~7-7.5 mm long.



### *Hemichroa crocea* (Striped Alder Sawfly)

The striped alder sawfly’s distinctive communal larvae can quickly skeletonize entire branches. The medium-sized (7mm) light-orange adults are on wing between July and August.



For further reference see:

Smith DR. 1971. Nearctic sawflies III. Heterarthrinae. U.S.D.A. Tech. Bull. No. 1420.  
 Smith DR. 1979. Nearctic sawflies IV. Allantinae. U.S.D.A. Tech. Bull. No. 1595.  
 Humble LM. 2010. First North American records for *Heterarthrus vagans* (Hymenoptera: Tenthredinidae), a Palaearctic leafmining sawfly of alder. Can. Ent. 142: 181-187.  
 Looney C, et al. 2012. Distribution of a potential new forest pest, *Monsoma pulveratum* (Hymenoptera: Tenthredinidae), in the Pacific Northwest states. NW Science 86: 342-345.

## Common Native Species

### *Cimbex americana*

This species is the largest (> 18mm long) sawfly in North America. The magnificent adults should be handled carefully; they can administer a sharp bite. Color varies, from yellow and black to deep orange. Feeding damage is rarely observed.



### *Monsoma inferentia*

This native congener of the green alder sawfly is uncommon. Adults are similar to *M. pulveratum*, but lack white abdominal margins. Larvae of the two species are indistinguishable.

### *Arge pectoralis*

Adults in this family can be recognized by the three-segmented antennae. Adults reared from *Alnus* have an orange pro- and mesonotum; larvae are gregarious feeders.



### *Empria multicolor*

This slender species has distinctive dorsal spots on the abdomen, a genus-level character. Larvae are uncommonly encountered.



Washington  
State Department of  
Agriculture



This project was partially funded with a grant from the USFS Forest Health Monitoring Program and USDA-APHIS Cooperative Agreements #11-8550-1505-CA and #11-8550-1502-CA. Learn more about Pacific Northwest sawflies at <http://pnwsawflies.biol.wvu.edu>