

Colorado Insects of Interest

Sirex Horntails

Scientific Names: *Sirex areolatus* (Cresson), *Sirex cyaneus* F., *Sirex juvencus californicus* (Ashmead), *Sirex longicauda* Middlekauf

Order: Hymenoptera (Bees, Wasps, Ants, Sawflies)

Family: Siricidae (Horntails, Woodwasps)



Figure 1. Blue horntail, *Sirex cyaneus*, female.

Identification and Descriptive Features: Adult Sirex horntails are cylindrical-bodied stingless wasps approximately 1-1.5 inches long. (Considerable size variations within a species occur, due to largely to quality of larval diet.) A typical horntail, they have a cylindrical abdomen that lacks the “wasp waist” of most wasp. Overall coloration is generally metallic blue to black; legs may be reddish-yellow and orange bands are present in some species.

Substantial physical differences occur between the sexes. Females tend to be slightly larger than males but are best distinguished by a long, stout spine at the end of the body. This is the ovipositor, used to insert eggs under the bark of trees. Males have only a short blunt spine at the end of the body.



Figure 2. Female blue horntail, *Sirex cyaneus*.

Larvae are creamy white wood boring grubs. They are legless and have a distinctive dark spine at the rear of the abdomen. However, these features are shared by all the other native species of horntail larvae that presently occur in Colorado.

Distribution in Colorado: The Sirex horntails are forest species associated with pines and, less commonly, other conifers. They often are found in recently milled wood and may emerge from lumber for several years after trees were originally felled or killed. Occasionally they are cause concern when they emerge in newly constructed buildings but they will not reproduce lumber or well-dried wood.

Life History and Habits: The Sirex horntails develop as wood borers of various conifers. Egg laying and subsequent larval development almost exclusively is associated with trees in serious decline or that have been badly damaged by fire, disease or other injuries. Egg laying may also

be done on freshly felled wood and horntail larvae can complete development in cut logs and milled wood.



Figure 3. Male *Sirex noctilio*. Photograph courtesy of Bill Ciesla/ IPM Images.

which may take from 1-3 years - or more, the larvae make meandering tunnels throughout the heartwood. These tunnels are nearly circular in cross section and packed with fine sawdust. As they near full growth they move to the exterior of the tree and pupate just under the bark. Later the adults cut through the bark to emerge, leaving clean, circular exit holes.

Females use their long, spike-like ovipositor to insert eggs deeply into wood. Females also introduce mutualistic fungi in the genus *Amylostereum* through wounds made with the ovipositor. The fungus produces a white rot decay of the wood which makes it nutritionally more suitable for the horntail larvae that subsequently burrow through the wood.

During the course of their development,



Figure 4. *Sirex* horntail larva. Photograph courtesy of Dennis Haugen/IPM Images.

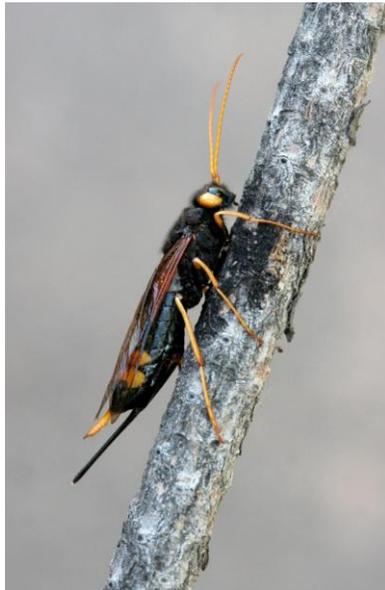


Figure 5. *Urocerus gigas flavicornis* female. Photograph by David Leatherman.

Related Species: Ten species of horntails have been recorded from Colorado (Table 1). Most commonly encountered is *Tremex columba* L., known as the **pigeon tremex**, which develops in declining hardwoods such as maple, ash and elm. All other species that occur in the state are associated with conifers. The pigeon tremex and its most prominent natural enemy are discussed in Colorado State Extension Fact Sheet 5.604, *Pigeon Tremex and the Giant Ichneumon Wasp* (<http://www.ext.colostate.edu/pubs/insect/05604.html>).

The European woodwasp, *Sirex noctilio* F., is a European species recently found in North America and a cause of concern due to its potential to damage pines in other areas of the world. Presently it is only known from the northeastern US. It closely resembles both *Sirex juvencus californicus* (Ashmead) and *Sirex longicauda* Middlekauf. A fact sheet is available to help distinguish and monitor this species (<http://www.ext.colostate.edu/pubs/insect/Woodwasp.pdf>).

Table 1. Horntails (Woodwasps) of Colorado

Sirex areolatus (Cresson)

Sirex cyaneus F. **blue horntail**

Sirex juvencus californicus (Ashmead)

Sirex longicauda Middlekauf

Urocerus albicornis F.

Urocerus californicus Norton

Urocerus gigas flavicornis (F.)

Xeris morrisoni morrisoni (Cresson)

Xeris spectrum spectrum (L.)

Tremex columba (L.) **pigeon tremex**



Figure 6. Pigeon tremex, *Tremex columba*, female.