

VIBURNUM CLEARWING BORER: *Synanthedon viburni* (Engelhardt) Order - Lepidoptera; Family - Sesiidae

DISTRIBUTION - This insect occurs over the entire eastern United States from Nova Scotia, Ontario and New York south to Virginia and west to Illinois, Iowa, and Wisconsin. A few specimens have been found in Colorado.

DESCRIPTION - The adult is a bluish-black "wasp-like" insect. The wings are transparent with black veins and shaded a pale yellow. Wingspan is from 16 to 30 mm. The antennae are black with the females having a white band near the tip. The thorax is bluish-black with pale yellow markings. The abdomen is steel blue with the second segment having a narrow white band and the fourth segment marked with white on both sides. The anal tuft is bluish-black and edged in white.

The larva is white, lightly pink to dark pink, with a reddish-brown head, and is approximately 15 mm long.

HOSTS - *Viburnum spp.* are the only known hosts. Viburnum that is very susceptible to attack include: *V. lantana*, *V. lentago*, *V. x burkwoodii* 'Mohawk', *V. opulus*, *V. prunifolium*, and to a lesser extent, *V. trilobum*. *V. dentatum* cultivars appear to be fairly resistant to borer attack.

DAMAGE - This is a very aggressive wood borer which tunnels into the crown and branches of the viburnum plant. If left uncontrolled, this borer is capable of destroying an entire hedge of viburnum within a few years. Healthy shrubs may be attacked as well as unthrifty shrubs.

LIFE CYCLE - The larvae overwinter in the tunnels that they have excavated under the bark of viburnum shrubs. The larvae emerge and continue to feed in the spring and then construct oblong silken cocoons within the burrow to pupate. Pupation can occur as early as mid-May and continue through mid-August.

Adults can emerge in early June and can be active into September. Mating and oviposition occur soon after emergence and females deposit the eggs on the bark of the host plant. The larvae later hatch and bore into the bark. There is one generation per year.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
[-----Larvae Various Instars-----]											
[-----Pupae -----]											
[-----Adults-----]											
[-----Eggs-----]											
[----- Larvae ---->>Overwintering -----]											
Observed at: Northern Indiana						General Rule: +/- 1 week for each 60 miles change in Latitude					

INSPECTION TIPS - Injury often occurs near the base of the shrub and a frass exudate is often present at the soil line. This is most evident during late summer and early fall when large piles of frass may be easily noticed at the bases of infested plants. Also during this same time period, infested plants will often display a premature fall coloring (especially *V. opulus*). Other viburnum cultivars, such as 'Mohawk', may display wilted, brown foliage.

Infested branches will easily snap at the site of the larvae tunneling, which is usually most extensive at the branch base. A number of larvae may be present in each infested branch. Callus-like plant growths are often visible at the sites of branch injury. Empty pupal skins may be found protruding from the bark during summer adult emergence periods.

CONTROL TIPS - This is a very difficult insect to control once it has become established. Prevention is very important. Any new viburnum plants intended for field planting should be carefully examined for the presence of borers. If a grower is located in a residential area where viburnum and borer infested plants exist, the grower should consider not trying to grow viburnum. If the grower decides to plant viburnum, he should be prepared to make perennial preventative treatments throughout the adult flight period.

Pheromone traps are commercially available to help time insecticide applications for viburnum borer. Adult males emerge slightly earlier than the females. It is generally recommended to apply the first insecticide application within 10 days after the first males are noticed in the pheromone trap. Adult emergence can also be correlated to the very end of the blooming period of *Spiraea vanhouttei* (bridal wreath spirea). Most of the blossoms will be brown and a few will be white. Labeled insecticides that have a long lasting residual should be used to soak the root flair and canes near ground level of susceptible hosts. Early applications are the most important, since the adult flight period peaks within the first 4 weeks; however repeat application may be necessary to cover the entire flight period depending on the residual effect of the insecticide. These applications target 1st instar larvae as they hatch from the egg, and may also help control emerging adults. Control efforts may cease when male moths are no longer found in the pheromone trap.

Sanitation is critical. Late summer and fall is a good time to easily locate infested plants and remove them.

RELATED PESTS - *S. viburni* closely resembles *S. exitiosa* (Say), the greater peachtree borer, particularly in its life-cycle. Neither the greater (*S. exitiosa* (Say)) nor lesser (*S. pictipes* (Grote & Robinson)) peachtree borers are known to feed on viburnum. *S. fatifera* (Hodges), the lesser viburnum clearwing, also attacks viburnum plants.

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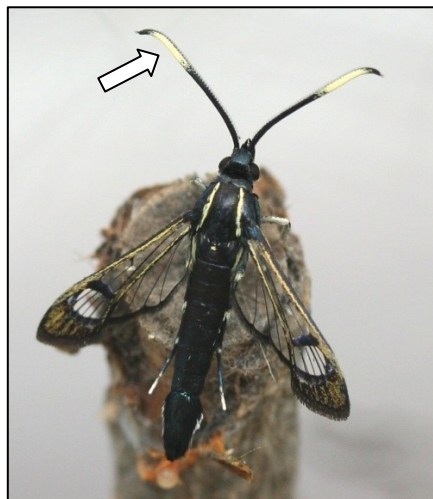
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PHOTOGRAPHS -



--- Adult male (Left) William McAdams, Iowa. White tips are characteristic (Arrow)

Empty pupal case (Right) --- Todd Voss, Iowa.





Pupa (Top Left), Larva & Galleries (Top Right), Damaged hedge row (Bottom) --- Todd Voss, Iowa.



