



Leatherwing (Soldier) Beetles

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Order: Coleoptera

Family: Cantharidae

Species: *Chauliognathus pennsylvanicus* and *Chauliognathus marginatus*

Beetles in the family Cantharidae are referred to as soldier beetles or leatherwings. The name soldier beetle originates from the elytra (front wings) of one of the earliest described species being reminiscent of early uniforms of British soldiers. The latter name was coined for the soft nature of the elytra. Two species in the genus *Chauliognathus* are commonly found in Virginia. *Chauliognathus pennsylvanicus* (Fig 1) is often referred to as the Pennsylvania leatherwing, or the goldenrod soldier beetle referring to its favorite flowering plant in the fall. A similar species *Chauliognathus marginatus*, the margined leatherwing, is found in the spring on various flowers.



Fig. 1. Pennsylvania leatherwing beetle



Fig. 2. Margined leatherwing beetle

Description and Life History

Though soldier beetles resemble fireflies, they lack the light-producing organ on their abdomen and their head is not concealed from above by the pronotal plate. Cantharid beetles in general are elongate with soft and flexible elytra. The two *Chauliognathus* species range in size from 1/2 to 5/8-inch long, and have yellowish to orange elytra. Pennsylvania leatherwing has two prominent brown-black spots near the tips of the elytra and a black spot in the center of the pronotum (Fig. 1). In contrast, the elytra of the margined leatherwing can vary considerably in the amount of dark markings (Fig 3) and the dark marking on the pronotum is a band that reaches both the front and the back edge (Fig. 2). Another way to differentiate these two species is the time period that the adults are present; Pennsylvania leatherwing adults are

active in the fall and margined leatherwing adults are active in the spring. This is also important in regards to conservation biological control as flower resources need to be available in early spring for one species, and in late fall for the other.

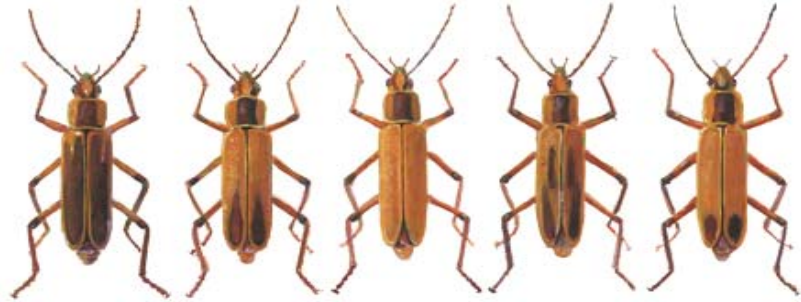


Fig. 3. Variations in color patterns of margined leatherwing

Leatherwing beetles have one generation per year. Adults of both species typically

feed and mate on flowers (Fig. 4A). Eggs are deposited in clusters in the soil (Fig. 4B), and hatch in ~10 days. Tiny neonate larvae are white-colored and display little or no activity until first molt (Fig. 4C). After about 24 h, they take on C shape (Fig. D). With each successive molt, the larvae darken in color until eventually reaching a black velvety appearance (Fig. 4E). Activity also increases as the larva develops. Leatherwing larvae are voracious predators consuming a multitude of soft-bodied insects (Fig. 4F).

A.



B.



C.



D.



E.



F.



Fig. 4. Margined leatherwing adult feeding on pollen in the spring (A), eggs laid in the soil (B), neonate larvae (C), 2nd instar larvae (D), velvety black late instar larva (E), and larva devouring insect prey (F)