



Soldier Beetles (Leatherwings)

Chauliognathus marginatus and *Chauliognathus pensylvanicus* (Coleoptera: Cantharidae)

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Fig. 1: Margined leatherwing (left) and goldenrod soldier beetle (right) Photos: Matt Edmonds and Roxanne Bernard, bugguide.net

Introduction

Cantharids, known as soldier beetles or leatherwings, are medium-sized beetles that are present throughout Virginia. Two species in the genus *Chauliognathus* are the most frequently observed in the commonwealth; the margined leatherwing (*Chauliognathus marginatus*) is found during the spring and early summer, while the Pennsylvania leatherwing or goldenrod soldier beetle (*Chauliognathus pensylvanicus*) is active during the late summer and early fall (Fig. 1). Both species visit a variety of wild and cultivated flowers, and they can be considered beneficial insects.

Description

Soldier beetles are elongate, slender beetles with long legs and antennae. They exhibit several characteristics that easily distinguish them from other beetle groups. Their first pair of wings, called elytra, are soft and leathery instead of hardened, which is how they came to be known as

leatherwings. They also have a forward-projecting head, which is easily seen from above and is not concealed by an enlarged pronotum or neck plate. Many soldier beetles look superficially similar to lightning bugs, but they can be distinguished by their smaller eyes, clearly visible head, and lack of a light-producing organ at the tip of the abdomen (Fig. 2).

The two *Chauliognathus* species common in Virginia are distinguishable by morphology and seasonal period of activity. The margined leatherwing has a black stripe on the pronotum with yellow margins to the left and right, black markings on the elytra ranging from small dots to entirely black elytra, and black “stockings” on the legs (Fig. 1). Margined leatherwing adults are active from late May to early July in Virginia.

The goldenrod soldier beetle has a black dot on the pronotum with yellow margins on 3-4 sides, black oval-shaped spots in the bottom half of the elytra, and solid black legs. (Fig. 1). Adults are active from August to early October in Virginia.

Life History

Margined leatherwings and goldenrod soldier beetles have one generation per year. Large numbers of adults are frequently seen feeding on pollen or nectar and mating on flowers, and pairs remain in copula for up to several hours.

Females deposit clusters of tiny, pearl-white eggs in the soil (Fig. 3). After about 10 days, white-colored neonate larvae hatch and remain inactive until their first molt, about 24 hours after hatch. With each molt, the larvae darken in color, and eventually reach a black, velvety appearance with a reddish-brown head capsule. As the larvae grow, their activity levels increase, and they can be found at ground level or in on plants hunting for soft-bodied insects. Larvae dig small chambers in the soil to overwinter, then pupate and emerge as adults in either the spring or late summer.

Interactions with Humans

Soldier beetles are beneficial insects and are easy to catch, handle, and observe. Because of their frequent visitation of a diversity of flower species, adults are likely pollinators of a variety of plants. Larvae are omnivorous predators and readily eat many soft-bodied insects, including caterpillars, aphids, thrips, other beetle larvae, and insect eggs, including stink bug and harlequin bug eggs. They have been observed in ears of corn, the canopy of wildflowers, leaf litter, and turf grass, among many other unexpected environments. Research concerning their behavior and diet is forthcoming.

Though both larvae and adults have intimidating-looking jaws, neither are likely to bite or



Fig. 2: Soldier beetle, *Rhagonycha* sp. (top) and lightning bug, *Photuris* sp. (bottom) Photos: John Rosenfeld, bugguide.net

bother humans.

When disturbed, adults and larvae of both species can secrete a white, strong-smelling liquid from glands on the sides of their body. The smell and foul taste of the liquid deters predators. It can easily be washed off with soap and water, and is not harmful to humans.



Fig. 3: Leatherwing eggs (left), neonate larvae (middle), and mature larvae (right) Photos: John Rosenfeld, bugguide.net