Goldenrain Tree Bug
(Redshouldered Bug)

Figure 1. Adult goldenrain tree bug. The wings of this individual are somewhat shortened, typical of the brachypterous form of the insect.

Scientific Name: *Jadera haematoloma* (Herrich-Shaeffer)

Order: Hemiptera (Bugs, Aphids, Scale Insects, Cicadas, etc.)
Family: Rhopalidae (Scentless Plant Bugs)

Identification and Descriptive Features: Adults are dark brown or black insects about 10-13 mm long. The "shoulder" area, eyes, and a border of the abdomen are red. Shortwinged forms (brachypterous) forms also may occur where the wings do not fully cover the abdomen, exposing areas of red. Nymphs have a reddish body with a brown thorax, antennae, and legs. Another common name for this insect is the "redshouldered bug" because of its prominent red markings.

Distribution in Colorado: Goldenrain tree bugs in Colorado occur in only highly localized areas, always in close association with goldenrain tree (*Koelreuteria paniculata*), a non-native tree that is promoted as an interesting ornamental. In southeastern Colorado it may be found in association with wild soapberry.

Figure 2. Goldenrain tree bug nymph.

Life History and Habits: Winter is spent in the adult stage and the insects move to the area of goldenrain trees in spring, shortly after bud breek. In Colorado, the goldenrain tree bug is only known to feed on the seeds and foliage of goldenrain tree. In the southern states, where this insect is much more common and native, several species of native and introduced plants of the soapberry family (Sapindaceae) also are hosts. Chinaberry (*Sapindus drummondi*) is a species particularly associated with development of large local populations of this insect.

Eggs are laid as small groups on the leave or near the dropped seeds produced during the previous year. The nymphs feed on the seeds, taking 6-8 weeks to become full grown. Larger insects may often be seen piercing seeds and dragging them considerable distances to feed. It is unclear if more than one generation is produced annually under Colorado conditions but two generations are known to occur in Oklahoma. Masses of nymphs and adults begin to be noticeable by midJuly and continue to be present into early September, with a mixture of life stages present throughout this period. Where trees are near buildings the insects may mass in large numbers on the sides of buildings and will enter through cracks and other openings. However, although some may find their way indoors they do not survive indoors through winter, as can boxelder bugs and some other nuisance invader species that occur in the state.

Biological Note: The goldenrain tree bug has been the subject of several studies on the ability of insects to rapidly evolve adaptations to new hosts. It is a species native to the southern US where it was associated with three native species of plants in the soapberry family. However, various soapberry family plants have been introduced into areas of the southern US (including goldenrain tree) which has provided new sources of host plants on which the insects can develop. To adapt to these plants populations of the insect have developed longer, or shorter, mouthparts to better reach the seed of the various local hosts. Biochemical changes have also been documented that allow the insects to metabolize defensive compounds of the new hosts.

Figure 3. Boxelder bug adult and nymphs. Boxelder bugs feed on seeds of boxelder trees and many may spend winter within nearby buildings.

Related Species: Goldenrain tree bugs are sometimes mistaken for the **boxelder bug**, *Boisea trivittata* (Say), a related insect also in the scentless plant bug family Rhopalidae. Although both species are primarily black and of similar size and shape, the red markings are very different between the species. Habits also vary as the boxelder bug is associated with seeds of *Acer* spp., notably boxelder maple (*Acer negundo*).

Figure 4. Goldenrain tree bug, also known as the "redshouldered bug".