

Order Hemiptera, Suborder Heteroptera: True bugs



Fourlined plant bug adult (Johnny N. Dell, bugwood.org).



Fourlined plant bug nymph (Dawn Dailey O'Brien, Cornell University, Bugwood.org)

Hemiptera means “half wing” and refers to the fact that the front half of the first pair of wings is toughened and hard, while the back of the first pair and the second pair is membranous. Hemipterans also have piercing and sucking mouthparts; some suck plant juices and are plant pests, while others are predators and can inflict a painful bite.

Morphology

Adults

1. **Mouthparts:** piercing-sucking; arising from front of head and curving below body when not in use. Mandibles and maxillae are long and threadlike, called stylets, that are interlocking with one another to form a flexible feeding tube (proboscis), which contains both a food channel and a salivary channel. These stylets are enclosed within a protective sheath (the labium) that shortens or retracts during feeding.
2. **Antennae:** antennae slender with 45 segments
3. **Legs:** cursorial
4. **Body segments:** pronotum usually large, trapezoidal or rounded. Triangular scutellum present behind pronotum
5. **Tarsi:** tarsi 2 or 3segmented
6. **Wings:**
 - immatures:** nymphs, with wing buds
 - Look similar to adults
 - Feed in same habitat

Development: Gradual metamorphosis (egg, nymph, adult)

Life History

Habitats: Adapted to a broad range of habitats terrestrial, aquatic and semi aquatic.

Feeding: Terrestrial species feed in vascular tissues or on the nutrients stored within seeds. Others are predators on a variety of small arthropods. The bed bugs, and bat bugs in the Family Cimicidae, live exclusively as ectoparasites on birds and mammals (including humans). Aquatic species are found on the surface of both fresh and salt water, near shorelines, or beneath the water surface in nearly all freshwater habitats. With only a few exceptions, these insects are predators of other aquatic organisms.

Importance in landscapes: Plant feeding bugs are important pests of many plants. They may cause localized injury to plant tissues, they may weaken plants by removing sap, and they may also transmit plant pathogens. Predatory species are beneficial.

Families of Herbivores

Plant Bugs (Family Miridae) Most species feed on plants, but some are predaceous

Seed bugs (Family Lygaeidae) Most species are seed feeders, a few are predatory. This (Family) includes the chinch bug, *Blissus leucopterus*, a pest of small grains, and the bigeyed bug, *Geocoris bullatis*, a beneficial predator.

Stink bugs (Family Pentatomidae) Shield shaped body with large, triangular scutellum. Most species are herbivores, some are predators. All have scent glands, which can produce an unpleasant odor.

Lace bugs (Family Tingidae)

Squash bugs and leaf-footed bugs (Family Coreidae) Broad-headed bugs (Family Alydidae)

Scentless plant bugs (Family Rhopalidae) Stilt bugs (Family Berytidae)

Families of Terrestrial Predators

assassin bugs (Family Reduviidae) ambush bugs (Family Phymatidae) damsel bugs (Family Nabidae)

minute pirate bugs (Family Anthocoridae)

Families of Aquatic Predators

water boatmen (Family Corixidae) water striders (Family Gerridae) water scorpions (Family Nepidae)

giant water bugs (Family Belostomatidae) creeping water bugs (Family Naucoridae)

In the textbook, *IPM of Midwest Landscapes*



Pests of Trees and Shrubs

Order Hemiptera, True bugs

Family Miridae, Plant or leaf bugs

ash plant bug, *Tropidosteptes amoenus*

fourlined plant bug, *Poecilocapsus lineatus*

honeylocust plant bug, *Diaphnocoris chlorionis*

Family Rhopalidae, Scentless plant bugs

boxelder bug, *Boisea trivittatus*

Family Tingidae, Lace bugs

azalea lace bug, *Stephanitis pyrioides*

lace bugs, several species

Pests of Turf

Order Hemiptera, True bugs

Family Lygaeidae, Bigeyed bugs

chinch bugs, *Blissus* species

false chinch bug, *Nysius raphanus*

Beneficial Hemiptera: Predators

Family Anthocoridae, Pirate bugs

insidious flower bug, *Orius insidiosus*

Family Lygaeidae, Bigeyed bugs

bigeyed bug, *Geocoris* species

Family Miridae, Plant or leaf bugs

plant bug, *Deraeocoris nebulosus*

Family Nabidae, Damsel bugs

damsel bug, *Nabis* species

Family Pentatomidae, Stink bugs

spined soldier bug, *Podisus maculiventris*

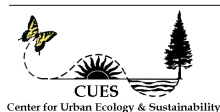
two-spotted stink bug, *Perillus bioculatus*

Family Reduviidae, Assassin bugs

adult assassin bug, several species

wheel bug, *Arilus cristatus*

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