

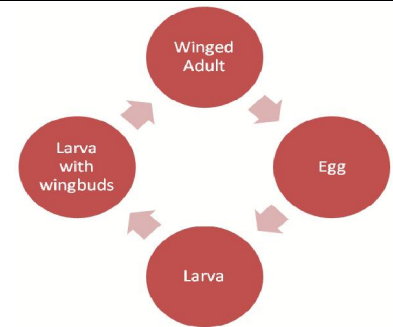


William T. Kemper Center for Home Gardening

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Insect Order ID: Hemiptera (True Bugs)

Life Cycle—Gradual metamorphosis (sometimes called incomplete or simple). Winged adults lay eggs. Larvae (nymphs) look more and more like adults as they molt and mature. Wings begin as tiny wingbuds on larvae and gradually grow larger and larger until fully developed on adults.



Adults—The front part of the forewings are hard or leathery but the ends are membranous. The forewings cross down the back, overlapping where the wings become membranous forming a V-shape. Most species have a triangular scutellum (hardened plate) at the base of the wings. Some have prominent shoulders (e.g., stink bugs) making the body shield-shaped; others (e.g., ambush bugs) are wider at the rear with the sides of the abdomen extending beyond the wings; and others are oval-shaped (e.g., milkweed bugs). Antennae are clearly visible in all. *(Click images to enlarge or orange text for more information.)*



Front part of
forewings hardened



Ends of forewings
membranous



Triangular scutellum
at base of wings



Wings cross
forming a V-shape



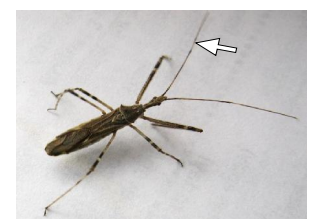
Sharp shoulders,
shield-shaped body



Rounded shoulders,
oval-shaped body



Colors vary



Antennae visible
except aquatics

Eggs—Often, but not always, barrel-shaped. *(Click images to enlarge or orange text for more information.)*



Harlequin bug
eggs



Wheel bug
egg mass



Barrel-shaped
eggs hatching



Football-shaped
squash bug eggs

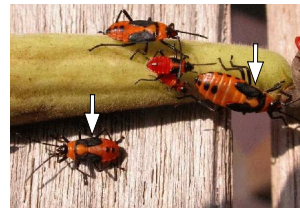
Larvae (nymphs)—Look similar to adults. After each molt, the larvae look more adultlike and the wings are larger and more developed than the previous instar (the stages between molts). However, the color and markings in some species can be different between instars. Bodies oval to teardrop-shaped to shield-shaped. Antennae clearly visible. Often gregarious. *(Click images to enlarge or orange text for more information.)*



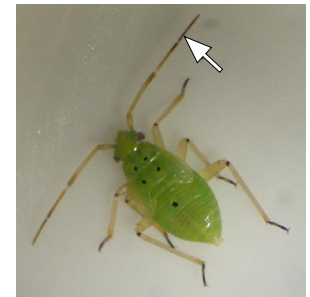
Newly hatched larvae
lack wingbuds



Wingbuds with
triangular scutellum
between them



Wingbuds grow
as larvae grow



Antennae visible
except aquatics



Piercing-sucking
beak



Oval-shaped



Shield-shaped



Color & markings
can change
between instars



Larval stages & adults
often mixed

Pupae—None. True bugs go through gradual metamorphosis. Each larva (nymph) look more and more adultlike.

Beneficial/Benign Aspects—Many are predators, particularly those with a short, extremely stout piercing-sucking beak, such as, the assassin and thread-legged bugs (including wheel bugs), the ambush bugs, damsel bugs, minute pirate bugs, and even some members of the stink bug family particularly those with spiny shoulders, along with many other species in various families. When in doubt, observe behavior to determine whether beneficial or pest. Beneficials pierce insects, mites, or other prey and suck out the body fluids. *(Click images to enlarge or orange text for more information.)*



Short, stout beak of
a predatory bug



Wheel bugs



Assassin bug



Stilt bug

Damage—Both adults and nymphs have piercing/sucking mouthparts. The piercing-sucking beak of plant pests is usually threadlike, as opposed to the stout beak possessed by beneficial bugs. Bug pests pierce plant tissue and suck out the juices. Sometimes their saliva contains a toxin that causes plant tissue to deform. They do NOT make holes, and, unlike other suborders of Hemiptera, true bugs do NOT produce honeydew. *(Click images to enlarge or orange text for more information.)*



Stippled



Extreme stippling
(bleached)



Bleached leaves



Black fecal spots
(lace bugs)



Stunted,
deformed



Wilted and
sucked dry



Vector diseases
such as fireblight



Fruit pests

Comments—True bugs were formerly the only insects classified in the Order Hemiptera, meaning “half wings” and the only insects that fit the meaning. They are now classified in the order Hemiptera, Suborder Heteroptera.