Study List of Common Arthropods in Texas

Students should also study images from the 4-H Entomology Study Guide at https://agrilifeinsectimages.smugmug.com.

This list provides the accepted common names, host or location and significance of each species required for the identification portion of the 4-H Entomology ID Contest. These are also the accepted common names for the 4-H Entomology Collection Contest.

Host or location is also indicative of habitat. Host designation is not necessarily descriptive of all species within that group of insects, but may represent the majority of species or most commonly encountered.

Significance. The significance designated in this guide may not apply to each and every species using that common name. Therefore, significance was assigned based on the most common species or where they are most commonly encountered. An explanation of significance is:

- **Pest** - species that can cause economic loss, be a nuisance, or pose a medical threat. Many species listed as pest can also have some beneficial qualities.
- **Beneficial -** species that are beneficial to the environment or agriculture and are generally considered pollinators, predators, or recyclers.
- **Inconsequential** - species that do not pose a great risk as a pest insect or are considered especially beneficial.
- **Variable -** species that can be a pest in certain situations, but beneficial in others. The situation makes the pest and visa versa.

Level	Common Name	Order	Host or Location	Significance
J	Silverfish	Zygentoma	House	Pest
I	Mayflies	Ephemeroptera	Near water	Inconsequential
J	Black-winged damselfly	Odonata	Stream	Beneficial
J	Green darner	Odonata	Slow moving water	Beneficial
I	Stoneflies	Plecoptera	Near water	Inconsequential
J	American cockroach	Blattodea	House	Pest
I	German cockroach	Blattodea	House	Pest
I	Smokeybrown cockroach	Blattodea	House	Pest
I	Termites	Blattodea	Wood, stumps	Pest
J	Praying mantids	Mantodea	Shrubs, vegetation	Beneficial
I	Earwigs	Dermaptera	Leaf litter	Inconsequential
I	Banded-winged grasshopper	Orthoptera	Pasture	Pest
J	Differential grasshopper	Orthoptera	Pasture	Pest
J	Long-horned grasshoppers	Orthoptera	Shrubs/grass	Pest
J	Field cricket	Orthoptera	Outdoors,	Pest
I	Mole crickets	Orthoptera	Sandy soil	Pest
I	True katydid	Orthoptera	Trees	Pest
J	Walkingsticks	Phasmatodea	Shrubs, vegetation	Inconsequential
I	Barklice, booklice	Psocodea	Tree trunk	Pest, Inconsequential
I	Chewing louse	Psocodea	Animals	Pest
J	Head louse	Psocodea	Humans	Pest
I	Hog louse	Psocodea	Swine	Pest
I	Short-nosed cattle louse	Psocodea	Cattle	Pest

Level	Common Name	Order	Host or Location	Significance
I	Thrips	Thysanoptera	Flowers	Variable
S	Ambush bug	Hemiptera (Heteroptera)	Flowers	Beneficial
S	Assassin bug	Hemiptera (Heteroptera)	Field crops	Beneficial
J	Backswimmer	Hemiptera (Heteroptera)	Pond	Beneficial
J	Bed bug	Hemiptera (Heteroptera)	Humans	Pest
S	Big-eyed bugs	Hemiptera (Heteroptera)	Field crops	Beneficial
S	Boxelder bug	Hemiptera (Heteroptera)	Boxelder trees	Pest
S	Burrower bug	Hemiptera (Heteroptera)	Grasses, peanuts	Pest
I	Chinch bug	Hemiptera (Heteroptera)	Grass	Pest
I	Cotton fleahopper	Hemiptera (Heteroptera)	Cotton	Pest
S	False chinch bug	Hemiptera (Heteroptera)	Sorghum	Pest
J	Giant water bug	Hemiptera (Heteroptera)	Water, ponds	Beneficial
J	Green stink bug	Hemiptera (Heteroptera)	Plants	Pest
J	Harlequin bug	Hemiptera (Heteroptera)	Cole crops	Pest
I	Kissing Bug	Hemiptera (Heteroptera)	Animals	Pest
S	Large milkweed bug	Hemiptera (Heteroptera)	Milkweed	Beneficial
I	Leaffooted bug	Hemiptera (Heteroptera)	Plants, weeds	Pest
S	Minute pirate bugs	Hemiptera (Heteroptera)	Insects	Beneficial
J	Squash bug	Hemiptera (Heteroptera)	Squash	Pest
S	Tarnished plant bug	Hemiptera (Heteroptera)	Plants, weeds	Pest
J	Toad bug	Hemiptera (Heteroptera)	Shoreline	Beneficial
S	Water boatman	Hemiptera (Heteroptera)	Pond	Beneficial
S	Water scorpions	Hemiptera (Heteroptera)	Ponds, lakes	Beneficial
I	Water striders	Hemiptera (Heteroptera)	Pond, streams	Beneficial
S	Wheel bug	Hemiptera (Heteroptera)	Vegetation	Beneficial
J	Cicadas	Hemiptera (Auchenorrhyncha)	Trees	Inconsequential
J	Leafhoppers	Hemiptera (Auchenorrhyncha)	Grasses, plants	Pest
S	Planthoppers	Hemiptera (Auchenorrhyncha)	Various plants	Pest
S	Spittlebugs	Hemiptera (Auchenorrhyncha)	Alfalfa, plants	Pest
S	Treehoppers	Hemiptera (Auchenorrhyncha)	Trees	Pest
J	Aphids	Hemiptera (Sternorrhyncha)	Plants, row crops	Pest
I	Greenbug	Hemiptera (Sternorrhyncha)	Small grains	Pest
S	Pecan phylloxera	Hemiptera (Sternorrhyncha)	Pecans	Pest
I	Psyllids	Hemiptera (Sternorrhyncha)	Potato, plants	Pest
I	Scales, armored	Hemiptera (Sternorrhyncha)	Trees, shrubs	Pest
I	Scales, soft	Hemiptera (Sternorrhyncha)	Ornamental Trees	Pest
S	Whiteflies	Hemiptera (Sternorrhyncha)	Vegetables, cotton	Pest

Level	Common Name	Order	Host or Location	Significance
J	Dobsonflies	Megaloptera	Stream	Beneficial
J	Antlions	Neuroptera	Plants	Beneficial
S	Brown lacewings	Neuroptera	Insects	Beneficial
I	Green lacewings	Neuroptera	Insects	Beneficial
S	Mantispids (Mantisflies)	Neuroptera	Woodlots	Beneficial
S	Owlflies	Neuroptera	At lights	Beneficial
S	Alfalfa Weevil	Coleoptera	Alfalfa	Pest
J	Blister Beetle	Coleoptera	Plants, alfalfa, weeds	Pest
I	Boll Weevil	Coleoptera	Cotton	Pest
S	Carpet beetle	Coleoptera	Wool carpets	Pest
S	Carrion beetle	Coleoptera	Dead animals	Beneficial
J	Caterpillar Hunter	Coleoptera	Woodland	Beneficial
S	Click Beetle	Coleoptera	Corn, field crops	Pest
I	Colorado potato beetle	Coleoptera	Potatoes	Pest
J	Cottonwood borer	Coleoptera	Cottonwood trees	Pest
S	Elm leaf beetle	Coleoptera	Elm trees	Pest
J	Fireflies (lighteningbug)	Coleoptera	Weeds	Inconsequential
S	Flat-headed borer (Metallic wood borer)	Coleoptera	Trees	Pest
S	Flea beetles	Coleoptera	Weeds	Pest
J	Lady beetles	Coleoptera	Aphids	Beneficial
I	Lesser grain borer	Coleoptera	Stored grain	Pest
S	Locust borer	Coleoptera	Black locust trees	Pest
I	Maize weevil (rice weevil)	Coleoptera	Stored grain	Pest
J	May beetle (June beetle, Junebug)	Coleoptera	Shrubs	Pest
S	Mealworm	Coleoptera	Stored grain	Variable
I	Plum curculio	Coleoptera	Peaches	Pest
S	Red flour beetle	Coleoptera	Stored grains	Pest
S	Rove beetle	Coleoptera	At lights	Inconsequential
S	Sawtoothed grain beetle	Coleoptera	Stored grain	Pest
S	Soldier beetles	Coleoptera	Flowers	Inconsequential
J	Spotted cucumber beetle	Coleoptera	Cucurbits	Pest
I	Sweetpotato weevil	Coleoptera	Sweet potatoes	Pest
J	Tiger beetles	Coleoptera	Shady trails	Beneficial
S	Tumbling flower beetles	Coleoptera	On flowers	Inconsequential
S	Water scavenger beetle	Coleoptera	Stream	Inconsequential
S	Whirlygig beetle	Coleoptera	Stream, ponds	Inconsequential

Level	Common Name	Order	Host or Location	Significance
I	Scorpionflies	Mecoptera	Plants	Inconsequential
I	Fleas	Siphonaptera	Cat, dog	Pest
S	Bee flies	Diptera	Flowers	Beneficial
S	Black flies/Buffalo gnats	Diptera	Stream	Pest
S	Blow flies	Diptera	Carrion	Variable
I	Common cattle grub	Diptera	Cattle	Pest
J	Crane flies	Diptera	Meadow	Inconsequential
S	Deer fly	Diptera	Woodlands	Pest
S	Flesh flies	Diptera	Carrion	Variable
I	Horn fly	Diptera	Cattle	Pest
J	Horse fly	Diptera	Woodlands	Pest
J	House fly	Diptera	Barn	Pest
J	Mosquitoes	Diptera	Yard and meadow	Pest
S	Robber flies	Diptera	Woodlands	Beneficial
S	Sheep keds	Diptera	Sheep	Pest
I	Sorghum midge	Diptera	Sorghum	Pest
S	Stable fly	Diptera	Cattle	Pest
J	Syrphid fly (flower/ hover fly)	Diptera	Flowers	Beneficial
I	Caddisflies	Trichoptera	Near stream	Inconsequential
I	Alfalfa caterpillar (orange sulfur, alfalfa butterfly)	Lepidoptera	Alfalfa	Pest
S	Armyworm	Lepidoptera	Grasses	Pest
I	Bagworm	Lepidoptera	Trees	Pest
J	Black swallowtail	Lepidoptera	Carrot family	Beneficial
J	Bollworm or corn earworm	Lepidoptera	Cotton, corn, others	Pest
S	Buckeye	Lepidoptera	Plantain family	Inconsequential
S	Cabbage butterflies	Lepidoptera	Cole crops	Pest
I	Cabbage looper	Lepidoptera	General feeder	Pest
S	Cecropia	Lepidoptera	Oak	Inconsequential
S	Cutworms	Lepidoptera	Grass, plants	Pest
J	Fall armyworm	Lepidoptera	Grasses	Pest
S	Fall webworm	Lepidoptera	Trees	Pest
S	Forest tent caterpillar	Lepidoptera	Broad-leaved trees	Pest
I	Giant swallowtail	Lepidoptera	Citrus	Beneficial
J	Gray hairstreak (Cotton square borer)	Lepidoptera	Cotton	Pest
S	Great leopard moth	Lepidoptera	Variety of plants	Inconsequential
I	Greater wax moth	Lepidoptera	Honey bee hive	Pest
S	Indianmeal moth	Lepidoptera	Stored grain	Pest
S	Io moth	Lepidoptera	Trees, corn	Inconsequential
J	Luna moth	Lepidoptera	Oak	Inconsequential

Level	Common Name	Order	Host or Location	Significance
J	Monarch	Lepidoptera	Milkweed	Beneficial
S	Mourningcloak butterfly	Lepidoptera	Willow	Inconsequential
S	Peachtree borer	Lepidoptera	Peach trees	Pest
S	Pecan nut casebearer	Lepidoptera	Pecans	Pest
I	Pink bollworm	Lepidoptera	Cotton	Pest
J	Polyphemus	Lepidoptera	Oaks	Inconsequential
S	Question mark	Lepidoptera	Elms	Inconsequential
J	Red admiral	Lepidoptera	Nettles	Inconsequential
S	Saltmarsh caterpillar	Lepidoptera	Grasses, weeds	Variable
I	Silverspotted skipper	Lepidoptera	Black locust	Inconsequential
S	Sorghum webworm	Lepidoptera	Sorghum	Pest
S	Southwestern corn borer	Lepidoptera	Grain crops	Pest
S	Eastern tiger swallowtail	Lepidoptera	Cherry trees	Beneficial
I	Tomato hornworm	Lepidoptera	Tomatoes	Pest
J	Underwing moths	Lepidoptera	Trees	Inconsequential
S	Viceroy	Lepidoptera	Poplar	Inconsequential
J	Wood nymph	Lepidoptera	Thick woods	Inconsequential
J	Bumblebees	Hymenoptera	Meadow	Beneficial
S	Carpenter bees	Hymenoptera	Fence posts	Pest
J	Cicada killer	Hymenoptera	Soil	Beneficial
J	Honeybee	Hymenoptera	Flowers	Beneficial
S	Horntails	Hymenoptera	Logs	Variable
S	Ichneumon wasps	Hymenoptera	Flowers	Beneficial
S	Leaf-cutting bees	Hymenoptera	Flowers	Beneficial
J	Mud daubers	Hymenoptera	Buildings	Beneficial
J	Paper wasps	Hymenoptera	Houses	Pest
J	Red harvester ant	Hymenoptera	Pastures	Inconsequential
J	Red imported fire ant	Hymenoptera	Pastures, lawns	Pest
S	Sawflies	Hymenoptera	Plants	Pest
S	Tarantula hawk	Hymenoptera	Woodlands	Beneficial
S	Texas leafcutting ant	Hymenoptera	Woodlands	Pest
J	Velvet ants	Hymenoptera	Soil	Pest
J	Yellow jackets	Hymenoptera	Ground nests	Pest

Level	Common Name	Order	Host or Location	Significance
S	Brown dog tick	Subclass Acari	Dog	Pest
J	Lone star tick	Subclass Acari	Cattle	Pest
I	Spider mites	Subclass Acari	Plants	Pest
I	Crab spiders	Araneae	Flowers	Beneficial
S	Jumping spiders	Araneae	Garden	Beneficial
I	Recluse spiders	Araneae	Board piles	Pest
S	Tarantulas	Araneae	Soil	Beneficial
J	Widow spiders	Araneae	Woodlots	Pest
J	Wolf spiders	Araneae	Under rocks	Beneficial
J	Yellow garden spider	Araneae	Garden	Beneficial
I	Harvestmen	Opioliones	Caves	Inconsequential
J	Scorpions	Scorpiones	Log piles	Pest
S	Vinegaroons	Thelyphonida	Arid regions	Inconsequential
I	Sunspiders (windscorpions, camelspiders)	Solifugae	Arid regions	Inconsequential
S	Centipedes	Class Chilopoda	Ground	Inconsequential
S	Millipedes	Class Diplopoda	Leaf litter	Variable
S	Sowbugs and pillbugs	Isopoda	Compost	Variable
I	Springtails	Collembola	Surface of puddles	Variable

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Zygentoma (Silverfish)

Photo Credit: Salvador Vitanza

Silverfish

Lifecycle - Ametabolous
Status - Pest

Mouthparts - Chewing
Host - House

Silverfish are considered very primitive insects. They are flattened from top to bottom and have a scale-like covering that gives them a silvery appearance. These insects are a pest in homes and libraries, where they can damage books. They require very little water but do need a source of sugar or starch in their diet. Silverfish have long antennae and three long tail-like structures (**cerci**) on the end of the abdomen. This species is the most commonly seen member of the order Zygentoma.

Level: Junior, Intermediate, Senior

Ephemeroptera (Mayflies)

Mayflies

Lifecycle - Hemimetabolous
Status - Inconsequential

Mouthparts - Chewing
Host - Near water

Mayflies are an important part of the diet for many species of fish. The adults are delicate, soft-bodied insects and range in size from 1/4 inch to over 2 inches long. When at rest, the wings are held over the back. Immature stages develop in water for a period of a few weeks to a few years, depending on the species and water conditions. When the last aquatic stage leaves the water, it **molts** into a cloudy-winged stage called a **subimago**. The subimago soon molts into the true adults or **imago** stage. This stage has clear wings. Mayflies are the only insects to molt after they are able to fly.

Level: Intermediate, Senior

Odonata (Dragonflies and Damselflies

Black-winged Damselfly

Calopteryx maculata (Beuvois)
Family: Calopterygidae

Lifecycle - Hemimetabolous
Status - Beneficial

Mouthparts - Chewing
Host - Stream

The black-winged damselfly can be readily identified because it is the only species in Texas that has solid black wings. Males and females differ somewhat in coloration with males being darker-winged. **Naiads** are typically found in flowing streams. All damselflies are effective predators as naiads and adults. A wide variety of damselflies occur throughout Texas. Most of these cannot be accurately identified by anyone except damselfly experts. Damselflies can be distinguished from dragonflies because damselflies hold their wings over their back when at rest.

Level: Junior, Intermediate, Senior

Odonata (Dragonflies and Damselflies

Green Darner

Anax junius (Drury)
Family: Aeshnidae

Beneficial

Mouthparts - Chewing
Host - Near slow-moving water

Dragonflies come in a variety of colors. Many have patterns on the wings. Dragonflies hold their wings flat when at rest. The green darner is a dragonfly species. Darners are large, high-flying dragonflies which can be difficult to collect. They are occasionally a problem around bee hives when they prey on bees, but are considered effective predators as **naiads** and adults.

Level: Junior, Intermediate, Senior

Plecoptera (Stoneflies)

Stoneflies

Lifecycle - Hemimetabolous
Status - Inconsequential

Mouthparts - Chewing
Host - Near water

Adult stoneflies have long antennae and wings folded over the back. Stoneflies have aquatic immatures which prefer clear, flowing streams. This limits their distribution in Texas. The few species found in Texas (about 20) are usually in Central Texas or the Hill Country.

Level: Intermediate, Senior

Blattodea (Cockroaches and Termites)

American Cockroach

Periplaneta americana (Linnaeus)
Family: Blattidae

Lifecycle - Paurometabolous
Status - Pest

Mouthparts - Chewing
Host - House

This speices is one of the largest cockroaches, reaching about 2 inches long. They are reddish-brown with the margins of the **pronotum** light brown or yellowish. American cockroaches live in wood piles, decaying trees, sewer systems and inside buildings. They can be common household pests and eat a wide variety of foods. Adults can fly.

Level: Junior, Intermediate, Senior

Blattodea (Cockroaches and Termites)

German Cockroach

Blattellā germanica (Linnaeus)
Family: Ectobidae

Lifecycle - Paurometabolous
Status - Pest

Mouthparts - Chewing
Host - House

The German cockroach is about 5/8 inch long and light brown in color. Wings of adults cover the abdomen. The **pronotum** has two prominent dark stripes. Nymphs are smaller, wingless, and have a pale stripe that runs lengthwise down the middle of their darker brown body. This household pest can be a real nuisance and may be found in colonies.

Level: Intermediate, Senior

Smokybrown Cockroach

Periplānta fuligínosa Serville
Family: Blattidae

Lifecycle - Paurometabolous
Status - Pest

Mouthparts - Chewing
Host - House

Adult smokey brown cockroaches are dark brown to black. Bodies range from 1 1/4 to 1 1/2 inches long. Adults have wings longer than the length of their body. The pronotum is solid dark brown. They require high humidity to survive. Outdoors they are found in wooded areas with moisture and shade. Indoors, they are commonly found in attics or near fireplaces.

Level: Intermediate, Senior

Termites

Family: Termitoidae (formerly Order: Isoptera)

Lifecycle - Paurometabolous
Status - Pest

Mouthparts - Chewing
Host - Wood, stumps

Subterranean termites are structural pests of buildings and tunnel into wood. They have **protozoans** in their gut that digest the cellulose in wood. Termites are important recyclers of dead wood. Termites live in social colonies made up of workers, soldiers, and reproductives. Reproductive males and females can be winged or wingless. Reproductive females lay eggs and produce offspring. Workers and soldiers, of most species, are creamy white and very soft-bodied. Workers make up most of the colony and feed on wood and are responsible for damage. Soldiers have hardened heads that are usually darker than the body and defend the colony.

Level: Intermediate, Senior

Mantodea (Praying Mantids)

Praying Mantids

Lifecycle - Paurometabolous
Status - Beneficial

Mouthparts - Chewing
Host - Shrubs, vegetation

Praying mantids have **raptorial** forelegs, for grasping prey. They slowly stalk their prey or sit and wait. They can move extremely fast to capture their prey. The head of the praying mantis can be rotated in nearly a circle. They usually have an elongated **pronotum** and long, thin antennae. The Carolina mantid, *Stagmomantis carolina*, is a common species that is widely distributed. The female lays a frothy egg case that hardens after it is laid. Egg cases of some mantids are sold for biological control.

Level: Junior, Intermediate, Senior

Dermaptera (Earwigs)

Photo Credit: Salvador Vitanza

Earwigs

Lifecycle - Paurometabolous
Status - Inconsequential

Mouthparts - Chewing
Host - Leaf litter

Earwigs have shortened, leathery front wings. The hind wings are folded under the forewings. They can fly even though the wings are hidden, and are rarely seen flying. **Cerci** (pinchers) at the end of the abdomen are important characteristics of recognition. Some earwigs are nearly 1 to 1.5 inches long, but other species are smaller. Earwigs are occasional pests in gardens and crops. However, they are best known as a nuisance in and around homes, although they cause no damage. They emit an odor when crushed. Common Texas species are **predaceous**, capturing small arthropods with their cerci and devouring them with chewing mouthparts.

Level: Intermediate, Senior

Orthoptera (Grasshoppers, Crickets, Katydids)

Banded-winged Grasshopper
Family Acrididae

Lifecycle - Paurometabolous
Status - Pest

Mouthparts - Chewing
Host - Pasture

There are several species of banded-winged grasshoppers. They are conspicuous when they fly because of the brightly colored hindwings. Hindwings can be red, pink, or orange with dark bands. Some, like the Carolina grasshopper have yellowish bands on dark wings. When they land they tend to disappear because they blend in with the grass and soil. Some of the males in this group fly in circles with a loud snapping noise as part of the courtship ritual.

Level: Intermediate, Senior

Orthoptera (Grasshoppers, Crickets, Katydids)

Differential Grasshopper
Melanoplus differentialis (Thomas)
Family: Acrididae

Lifecycle - Paurometabolous
Status - Pest
Mouthparts - Chewing
Host - Pasture

The differential grasshopper is a short-horned grasshopper with a spine on the prosternum (underneath the **prothorax**, behind the head). These generalist feeders eat grasses, crop plants and fruits.

Level: Junior, Intermediate, Senior

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Long-horned Grasshopper
Family: Tettigoniidae

Lifecycle - Paurometabolous
Status - Pest
Mouthparts - Chewing
Host - Shrubs/grass

Long-horned grasshoppers have very long, thin antennae. Most are cryptically colored (blend in with foliage), are active at night and are noisy.

Level: Junior, Intermediate, Senior

Field Cricket
Family: Gryllidae

Lifecycle - Paurometabolous
Status - Pest
Mouthparts - Chewing
Host - Outdoors

Field crickets are common throughout Texas. There are over 2,000 species of crickets in the world. Only male crickets "chirp" and there are four types of chirping songs for different purposes. The chirping sound is made by rubbing the left hind leg against the right hind leg. Crickets are **omnivorous**; meaning they eat many different types of organic matter and they are **scavengers**. Crickets can carry human diseases and transmit through mechanical transmission.

Level: Junior, Intermediate, Senior

Mole Cricket
Family Gryllotalpidae

Lifecycle - Paurometabolous
Status - Pest
Mouthparts - Chewing
Host - Sandy soil

Mole crickets have robust front legs that are highly modified for digging and called **fossorial**. They tunnel rapidly just below the soil surface and make trails of pushed-up soil similar to that of a mole, only much smaller. Mole crickets can run very rapidly when on the soil surface. They are attracted to lights and are occasionally pests of vegetables.

Level: Intermediate, Senior

Orthoptera (Grasshoppers, Crickets, Katydids)

True Katydid

Family: Gryllidae

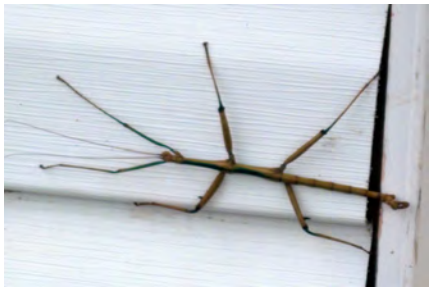
Lifecycle - Paurometabolous
Status - Pest

Mouthparts - Chewing
Host -Trees

The family Tettigoniidae is called longhorned grasshoppers due to their long, thin antennae. However, the name katydid is often applied to any member of the family. The "true" katydids are members of the genus Pterophylla. The species in this genus can be difficult to separate so the name best applies to the genus. "True" katydids are some of the heaviest and largest specimens in the family in Texas. They have wide bodies and typically are found in trees. Their singing at night is characteristic.

Level: Intermediate, Senior

Phasmatodea (Walkingsticks)



Walkingsticks

Lifecycle - Paurometabolous
Status - Inconsequential

Mouthparts - Chewing
Host -Shrubs, vegetation

Walkingsticks are slow-moving, camouflaged insects. Their long bodies, legs, antennae and color make them appear to be sticks. They feed on plants and sometimes **defoliate** trees. The twostriped walkingstick, *Anisomorpha buprestoides* (Stoll), is relatively short and stocky compared to other species and is known to ooze a milky secretion from between body segments that can burn skin temporarily. The longest insect in the United States is a walkingstick, *Megaphasma dentricus* (Stal), which reaches 7 inches in length.

Level: Junior, Intermediate, Senior

Psocodea (Barklice, booklice, true lice)

Barklice & Booklice

Lifecycle - Paurometabolous
Status - Inconsequential (barklice)

Mouthparts - Chewing
Host -Tree trunk (barklice)

Barklice and booklice are softbodied insects commonly found in litter, soil on bark and in tree foliage. They feed on fungi and molds. Some species, commonly called booklice, can be found indoors feeding on paper and grain products that are moldy and out of condition. Outdoors, barklice are considered harmless, but may wrap trees with webbing, although this does not hurt the tree.

Level: Intermediate, Senior

Psocodea (Barklice, booklice, true lice)

Photo Credit: Amy Murillo, University of California Riverside

Chewing Louse

Lifecycle - Paurometabolous
Status - Pest

Mouthparts - Chewing
Host -Animals

Chewing lice are small, flat, and wingless with a head that is wider than the thorax. They usually feed on feathers of birds, but some species will feed on mammals. Examples of chewing lice include the chicken head louse and chicken body louse.

Level: Intermediate, Senior

Head Louse

Pediculus humanus capitis (De Geer)

Lifecycle - Paurometabolous
Status - Pest

Mouthparts - Piercing & Sucking
Host -Humans

Head lice are sucking lice. They are small, flat, wingless **parasites** with a head narrower than the thorax and mouthparts formed for piercing and sucking and they get up to 3.5mm long. There are two subspecies; the body louse and the head louse. Head lice are usually only found on the head.

Level: Junior, Intermediate, Senior

Hog Louse

Haematopinus suis

Lifecycle - Paurometabolous
Status - Pest

Mouthparts - Piercing & Sucking
Host -Swine

The hog louse is yellowish in color and quite large for a louse, up to 1/4 inch long. This sucking louse has a narrow head. it is a well-known pest of hogs. Hog louse numbers can build up, especially in confined animal operations.

Level: Intermediate, Senior

Short-nosed Cattle Louse

Haematopinus eurysternus (Nitzsch)

Lifecycle - Paurometabolous
Status - Pest

Mouthparts - Piercing & Sucking
Host -Cattle

The short-nosed cattle louse lives on a sucks blood from cattle. These wingless insects are only 1/20 to 1/16 inch long.

Level: Intermediate, Senior

Thysanoptera (Thrips)

Thrips

Lifecycle - Paurometabolous
Status - Variable

Mouthparts - Rasping
Host - Flowers

Thrips often feed on flowers, plants, pollen and sometimes other insects and mites. They can be found by tapping a flower head over a piece of white paper or into a box. Thrips are so small they look like a hyphen that moves. The western flower thrips, *Frankliniella occidentalis*, is one of the more common pest species.

Level: Intermediate, Senior

Hemiptera, Suborder Heteroptera (True Bugs)

Ambush Bug

Family: Reduviidae

Lifecycle - Paurometabolous
Status - Beneficial

Mouthparts - Piercing & Sucking
Host -Flowers

Ambush bugs are predators which normally lie in wait for their prey. They have **raptorial** front legs for grasping, much like that of a praying mantis. They commonly sit on a flower, waiting for insects attracted to flowers.

Level: Senior

Assassin Bug

Family: Reduviidae

Lifecycle - Paurometabolous
Status - Beneficial

Mouthparts - Piercing & Sucking
Host -Field Crops

Assassin bugs are predators which feed on other insects. There are many species. Some of them are brightly colored with orange and black. Others are cryptically colored with greys and greens. If you trap one on your skin, it may poke it's beak into you as a defense. When that happens, the result is a quick, sharp pain that usually subsides within hours. They are usually found on plants, feeding on other insects, but are especially important in field crops as a predator.

Level: Senior

Backswimmer

Family: Notonectidae

Lifecycle - Paurometabolous
Status - Beneficial

Mouthparts - Piercing & Sucking
Host -Ponds

Backswimmers are predators that can inflict a strong bite. They swim upside-down through the water. Their hind legs are very long and modified to be used as oars. Their body is shaped similar to a boat with the upper surface of the body being keel shaped. Another adaptation is a darker **ventral** surface and lighter **dorsal** surface, which is advantageous when they are upside-down in the water.

Level: Junior, Intermediate, Senior

Hemiptera, Suborder Heteroptera (True Bugs)

Bed Bug

Cimex lectularius (Linnaeus)
Family: Cimicidae

Lifecycle - Paurometabolous
Status - Pest
Mouthparts - Piercing & Sucking
Host -Humans

Bed bugs feed primarily at night on the blood of warm-blooded hosts, especially humans. Their preferred habitat is bedding with seams or crevices, such as box springs, sofas, and other furniture. Adults are 1/4 inch in length, reddish brown, flattened, oval and wingless. Bed bugs feed at 5 to 10 day intervals with their feeding periods lasting about 12 minutes. They are not known to transmit diseases. They are moved from one place to another by humans, but will move from one unit to another in multi-unit buildings on their own.

Level: Junior, Intermediate, Senior

Big-eyed Bug

Geocoris sp.
Family: Geocoridae

Lifecycle - Paurometabolous
Status - Beneficial
Mouthparts - Piercing & Sucking
Host -Field Crops

Big-eyed bugs are predators that tend to stay on vegetation near the ground. They are important beneficial insects in cotton and other field crops. They large eyes and round bodies are characteristic of this group.

Level: Senior

Boxelder Bug

Boisea trivittata (Say)
Family: Rhopalidae

Lifecycle - Paurometabolous
Status - Pest
Mouthparts - Piercing & Sucking
Host - Boxelder Trees

Boxelder bugs feed only on boxelder trees. They seem to do little damage to the trees. They are a nuisance when they get abundant and try to enter homes as shelter for the winter.

Level: Senior

Burrower Bug

Pangaeus sp.
Family: Cydnidae

Lifecycle - Paurometabolous
Status - Pest
Mouthparts - Piercing & Sucking
Host -Grasses, peanuts

Burrower bugs are pests of various crops especially peanuts. They burrow into the soil and suck on roots and nuts in peanuts. Damage shows up as deformed and poorly flavored peanuts.

Level: Senior

Hemiptera, Suborder Heteroptera (True Bugs)

Chinch Bug

Blissus spp.
Family: Lygaeidae

Lifecycle - Paurometabolous
Status - Pest
Mouthparts - Piercing & Sucking
Host -Grass

Chinch bugs adults are about 1/16 inch long. They have white wings, folded flat on the back, which are marked with a triangular black patch at the middle of their outer edges. Legs are reddish to reddish-yellow. Chinch bugs feed on turf causing brown patches to form.

Level: Intermediate, Senior

Cotton Fleahopper

Pseudatomoscelis seriatus (Reuter)
Family: Miridae

Lifecycle - Paurometabolous
Status - Pest
Mouthparts - Piercing & Sucking
Host - Cotton

Cotton fleahopper adults are small yellowish-green bugs about 1/8 inch long with black specks on the upper surface of their body. Their piercing-sucking mouthparts are used to feed on leaves of cotton.

Level: Intermediate, Senior

Photo Credit: Salvador Vianza

False Chinch Bug

Nysius spp.
Family: Lygaeidae

Lifecycle - Paurometabolous
Status - Pest
Mouthparts - Piercing & Sucking
Host - Sorghum

False chinch bugs are sucking bugs that resemble the chinch bug but are less strikingly marked. They are usually a dull shade or gray brownish-black and have a wider head and larger eyes. They are about 3/16 inch long as adults. When large swarms enter sorghum fields they can be very damaging. They may also feed on lawns.

Level: Senior

Photo Credit: Jeff Sparks

Giant Water Bug

Family: Belostomatidae

Lifecycle - Paurometabolous
Status - Beneficial
Mouthparts - Piercing & Sucking
Host - Water, ponds

Giant water bugs are commonly attracted to lights and are very large, approximately 3 inches long. They are sometimes called “electric light bugs” because of their habit of flying to lights or “toe biters” because they’ll pierce toes with their beak if stepped on. They are predators and occasionally feed on small fish, but more commonly on insects. They have piercing-sucking mouthparts and can give a painful bite if not carefully handled by a collector.

Level: Junior, Intermediate, Senior

Hemiptera, Suborder Heteroptera (True Bugs)

Photo Credit: Kate Crumley

Green Stink Bug

Nezara viridula (Linnaeus)
Family: Pentatomidae

Lifecycle - Paurometabolous
Status - Pest
Mouthparts - Piercing & Sucking
Host - Plants

The southern green stink bug is one of the largest stink bugs in the US. It can be found in gardens, field crops and roadside flowers. Adults are up to 3/4 inch long and solid green in color.

Level: Junior, Intermediate, Senior

Harlequin Bug

Murgantia histronica (Hahn)
Family: Pentatomidae

Lifecycle - Paurometabolous
Status - Pest
Mouthparts - Piercing & Sucking
Host - Cole crops

The harlequin bug is a red/orange and black, spotted bug of the stink bug family. It is flat and shield shaped and as long as 3/8 inch. They are damaging to cole crops such as broccoli, cauliflower, kale and cabbage.

Level: Junior, Intermediate, Senior

Kissing Bug

Family: Reduviidae
Subfamily: Triatominae

Lifecycle - Paurometabolous
Status - Pest
Mouthparts - Piercing & Sucking
Host - Animals

Kissing bugs are blood feeding insects that may vector the **parasite** that causes Chagas disease. Kissing bugs are more active at night and feed on anything that has blood, including mammals, reptiles, and birds. They are common found under wood piles and other debris during the day. They resemble other assassin bugs but are set apart by the orange/red and black stripped pattern bordering the abdomen and wings that do not span the width of the abdomen.

Level: Intermediate, Senior

Large Milkweed Bug

Oncopeltus fasciatus (Dallas)
Family: Lygaeidae

Lifecycle - Paurometabolous
Status - Beneficial
Mouthparts - Piercing & Sucking
Host - Milkweed

The large milkweed bug is an attractive black and yellow, sucking insect that feeds on milkweeds and related plants. It is usually not harmful to milkweed and considered an important part of the ecosystem. It has been used extensively in laboratory work in entomology because it can easily be reared in the lab on milkweed seeds and water.

Level: Senior

Hemiptera, Suborder Heteroptera (True Bugs)

Leaffotted Bug

Leptoglossus phyllopus (Linnaeus)
Family: Coreidae

Lifecycle - Paurometabolous
Status - Pest
Mouthparts - Piercing & Sucking
Host - Plants, weeds

The dark brown color with a conspicuous whitish line across the the wings is characteristic of the species pictured here. Other species in this family may lack this, but all leaffooted bugs have hind legs flattened and expanded, almost leaf-like. They feed on tomatoes, southern peas, soybeans and many other plants. Adults are 3/4 inch long in this species, longer in others.

Level: Intermediate, Senior

Minute Pirate Bug

Orius sp.
Family: Anthocoridae

Lifecycle - Paurometabolous
Status - Beneficial
Mouthparts - Piercing & Sucking
Host - Insects

Minute pirate bugs are predators that feed on small insects and insect eggs. They are common in cotton and other field crops where they are considered beneficial.

Level: Senior

Squash Bug

Anasa tristis (De Geer)
Family: Coreidae

Lifecycle - Paurometabolous
Status - Pest
Mouthparts - Piercing & Sucking
Host - Squash

The squash bug is an elongate-flattened, oval, blackish brown bug about 2/3 inch long. Squash bugs are serious pests of squash and pumpkins.

Level: Junior, Intermediate, Senior

Tarnished Plant Bug

Lygus lineo (Beuvois)
Family Coreidae

Lifecycle - Paurometabolous
Status - Pest
Mouthparts - Piercing & Sucking
Host - Plants and weeds

Adults are oval, flattened, and about 1/4 inch long. They are coppery-brown with whitish-yellow markings. Nymphs are similar but smaller. Tarnished plant bugs feed on a wide variety of plants including cotton and alfalfa. They are sometimes pests. There are several similar related species.

Level: Senior

Hemiptera, Suborder Heteroptera (True Bugs)

Toad Bug
Family Gelastocoridae

Lifecycle - Paurometabolous
Status - Beneficial
Mouthparts - Piercing & Sucking
Host -Shoreline

Toad bugs are very easily overlooked. They are brownish and about 1/2 inch long. They hop much like toads and are typically found along rocky shores of freshwater lakes or ponds.

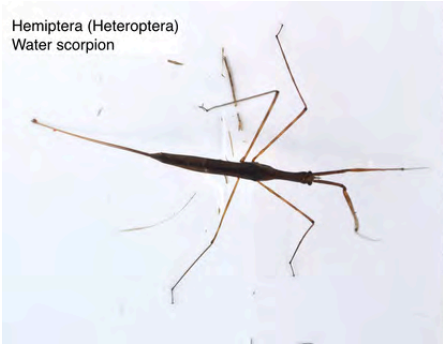
Level: Junior, Intermediate, Senior

Water Boatman
Family Corixidae

Lifecycle - Paurometabolous
Status - Beneficial
Mouthparts - Piercing & Sucking
Host - Pond

Water boatmen are commonly confused with backswimmers since they superficially resemble them. All water boatmen have a striped pattern across the back and they swim wing side up. Water boatmen are generally smaller than backswimmers. They are algae feeders and are unlikely to bite collectors.

Level: Senior



Water Scorpion
Family Nepidae

Lifecycle - Paurometabolous
Status - Beneficial
Mouthparts - Piercing & Sucking
Host - Ponds, Lakes

Water scorpions are not true scorpions, but predatory insects found common in slow moving or still water. They have long legs and a thin body and are confused with walkingsticks by some. Water scorpions do have wings and occasionally fly but are seldom seen doing so. They are often found among vegetation.

Level: Senior

Water Strider
Family Gerridae

Lifecycle - Paurometabolous
Status - Beneficial
Mouthparts - Piercing & Sucking
Host - Ponds, Streams

Water striders actually skate on the water surface. Water surface tension combined with hydrophobic hairs on the water strider's feet, allow water striders to walk on water. They can fly or skate across the water surface very rapidly and are often found on flowing streams.

Level: Intermediate, Senior

Hemiptera, Suborder Heteroptera (True Bugs)

Wheel Bug

Arilus cristatus (Linnaeus)
Family: Reduviidae

Lifecycle - Paurometabolous
Status - Beneficial

Mouthparts - Piercing & Sucking
Host -Vegetation

The wheel bug is a predator and a representative of the assassin bug family. They are large and conspicuous which causes concern when they occur around homes. The name refers to the elevated ridge on the pronotum which resembles a cogged wheel.

Level: Senior

Hemiptera, Suborder Auchenorrhyncha (Cicadas, Planthoppers and Leafhoppers)

Cicadas

Family: Cicadidae

Lifecycle - Paurometabolous
Status - Inconsequential

Mouthparts - Piercing & Sucking
Host -Trees

Cicadas make the loud buzzing noise in the trees during summer months. They sometimes are incorrectly called locusts but the name locust should only be used for certain migratory grasshoppers. Immature cicadas live in the soil where they suck sap from tree roots. There are many species and some live 17 years in the soil before emerging as adult cicadas. These periodical cicadas can cause damage to trees and shrubs from feeding and laying eggs.

Level: Junior, Intermediate, Senior

Leafhoppers

Family: Cicadellidae

Lifecycle - Paurometabolous
Status - Pest

Mouthparts - Piercing & Sucking
Host -Grasses, plants

Leafhoppers are small, very active, greenish to brownish, slender, wedge-shaped, jumping insects. Sizes range from 1/8 to almost 1/2 inch long. They suck plant juices with their piercing-sucking mouthparts.

Level: Junior, Intermediate, Senior

Planthoppers

Family: Fulgoroidea

Lifecycle - Paurometabolous
Status - Pest

Mouthparts - Piercing & Sucking
Host -Various Plants

Planthoppers are a diverse and large group. They are camouflaged to resemble or blend in with leaves. They are all plant feeders, but are not always damaging to the plant.

Level: Senior

Hemiptera, Suborder Auchenorrhyncha (Cicadas, Planthoppers and Leafhoppers)

Spittlebug
Family: Cercopidae

Lifecycle - Paurometabolous
Status - Pest

Mouthparts - Piercing & Sucking
Host - Alfalfa, plants

Spittlebugs are usually noticed as nymphs because they form a mass of spittle around their body for protection. Adults are normally brown or green and dull colored. However there are a few forms which are bright and attractively colored. All spittlebugs have a ring of spines on the apex (or tip) of the hind tibia which distinguishes them from leafhoppers
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Level: Senior

Treehoppers
Family: Membracidae

Lifecycle - Paurometabolous
Status - Pest

Mouthparts - Piercing & Sucking
Host -Trees

Treehoppers come in a variety of colors and patterns. Some are camouflaged and may appear as spines or twigs. All treehoppers have a **protnotum** extending over their back in the adult stage. The three-cornered alfalfa hopper, *Spissistilus festinus*, is a pest of soybeans and alfalfa. They feed near the base of small plants and can damage the stems enough to gridle them. The nymphs have the same general shape but a short pronotum and a row of spines down the back.

Level: Senior

Hemiptera, Suborder Sternorrhyncha (Aphids, Psyllids, Scales, Whiteflies)

Aphids
Family: Aphididae

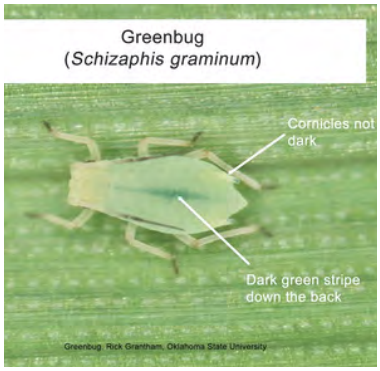
Lifecycle - Paurometabolous
Status - Pest

Mouthparts - Piercing & Sucking
Host -Plants, Row Crops

Aphids are generally under 1/8 inch long with only a few species that are larger. They are soft-bodied, with rounded or elongate bodies, long legs, and long antennae. The distinguishing feature is a pair of extension on the abdomen called **cornicles**. Adults may be winged or wingless. They can be almost any color: green, reddish, yellow or black. Some aphids produce a waxy secretion that covers their body, making them appear wooly and white. Aphids can produce live youth without mating or egg laying, but may also mate and lay eggs. Aphids suck plant juices and excrete liquid called **honeydew** which drops on whatever is below them. Honeydew is sticky and provides a strutrate for black tooy mold to grow. Aphids are sometimes called plant lice and allmost every kind of plant has an aphid species that feeds on it.

Level: Junior, Intermediate, Senior

Hemiptera, Suborder Sternorrhyncha (Aphids, Psyllids, Scales, Whiteflies)



Greenbug

Schizaphis graminum (Rondani)
Family: Aphididae

Lifecycle - Paurometabolous
Status - Pest

Mouthparts - Piercing & Sucking
Host -Small grains

The greenbug is an aphid. It is small, bright green, and has black tips on the legs, cornicles, and antennae. These soft-bodied insects are about 1/2 inch long. Note the darker green stripe down the center of the body, which serves as another identification aid. It has piercing-sucking mouthparts like all other aphids and feeds on rye, sorghum, barley, wheat and other small grains and grasses.

Level: Intermediate, Senior

Pecan Phylloxera

Phylloxera spp.
Family: Phylloxeridae

Lifecycle - Paurometabolous
Status - Pest

Mouthparts - Piercing & Sucking
Host -Pecan

Pecan phylloxera are an aphid-like insect responsible for **gall** formation on pecans. Phylloxera galls are wart-like growths on leaf stems or blades. Heavy infestations can result in crop loss or **defoliation**.

Level: Senior

Psyllids

Family: Psyllidae

Lifecycle - Paurometabolous
Status - Pest

Mouthparts - Piercing & Sucking
Host -Plants, potatoes

Psyllids are sometimes called “jumping plant lice”, but they are not lice at all. Psyllids can carry several plant diseases and are known as **vectors** (capable of transmitting disease from one host to another). There are many species and they may vary in appearance with transparent or pale wings. Psyllids species are very host-specific. The insects pictured are the Asian citrus psyllid (above) and potato psyllid (below). The potato psyllid is the same species as the tomato psyllid, but is called the potato or tomato psyllid depending on which host it is infesting.

Level: Intermediate, Senior

Armored Scales

Family: Diaspididae

Lifecycle - Paurometabolous
Status - Pest

Mouthparts - Piercing & Sucking
Host -Trees, shrubs

Females of this family are very small and conceal their bodies with a hard covering formed by the wax they secrete and cast skins from earlier **instars**. The shape of the covering is species-specific and may be elongate, smooth or rough and variable in color. Female bodies are flattened and disk-like with no eyes or legs. Males are winged and have well-developed legs and antennae. Armored scales include several serious orchard tree, shade tree, and ornamental plant pests. They usually feed on woody plants.

Level: Intermediate, Senior

Hemiptera, Suborder Sternorrhyncha (Aphids, Psyllids, Scales, Whiteflies)

Soft Scales

Family: Coccidae

Lifecycle - Paurometabolous
Status - Pest

Mouthparts - Piercing & Sucking
Host -Ornamental Trees

Female soft scales are elongate and usually convex. They have a smooth, hard exoskeleton or are covered in wax. Females usually have reduced or absent legs and antennae. Males may be winged or wingless. The brown soft scale, wax scales and tortoise scales are included in this family.

Level: Intermediate, Senior

Whiteflies

Family: Aleyroididae

Lifecycle - Paurometabolous
Status - Pest

Mouthparts - Piercing & Sucking
Host -Vegetables, cotton

Whiteflies are generally small, under 2mm even as adults. The adults are usually white, as the name implies, and fly slowly around plants. Their lifecycle is complex with the nymphs laying closely on the plant surface. The last nymphal stage is more like a pupal stage than a nymph. Eggs and nymphs look very different from adults. Whiteflies can be severe plant pests and some strains are resistant to insecticides. They are pests often pests in greenhouses, but can be pests in field crops and vegetables too. The silverleaf whitefly, *Bemisia argentifolii* (Bellows & Perring), is one of the worst pests in this family.

Level: Senior

Megaloptera (Dobsonflies)

Dobsonfly

Corydalus spp.
Family: Corydalidae

Lifecycle - Holometabolous
Status - Beneficial

Mouthparts - Chewing
Host -Streams

Dobsonflies are large (some are over 3 inches long) insects with long **membranous** wings. The wings are typically held flat over their back when they are at rest. Adults are often attracted to lights but usually only near flowing rivers. The male (pictured above) has extremely long mandibles, which are not particularly good for biting. However, these mandibles are used to grasp the female during mating. The adult female (no pictured) can be an effective biter if given the opportunity. Dobsonflies are the adult form of a common aquatic immature called a hellgrammite. Hellgrammites are aggressive predators found in flowing streams. They are good fish bait and are very often used as such.

Level: Junior, Intermediate, Senior