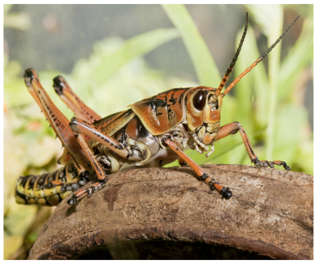


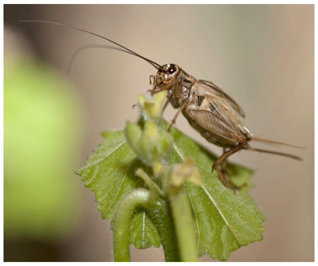
Southeastern Lubber Grashoppers

GRASSHOPPERS & CRICKETS

Orthoptera

Suborders:

Caelifera & Ensifera



Domestic Cricket

APPEARANCE & PHYSICAL ADAPTATIONS:

Grasshoppers and crickets are easily confused as they have similar characteristics such as similar body structures including enlarged hind legs built for jumping, chirping abilities and they undergo incomplete metamorphosis. Another commonality is their good vision and hearing. Having compound eyes, they are able to see in many directions at once. They are both in the Order Orthoptera, which in Greek means straight or rigid wing. This designates the modified front leathery-looking wing or tegmen (pl. tegmina) that are not used for flying.

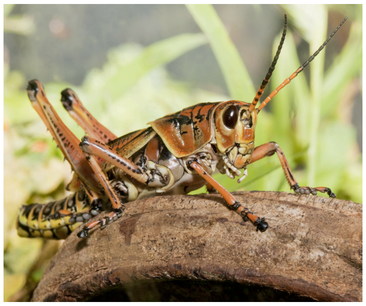
With over 20,000 different species, most Orthoptera live in the tropics with others distributed throughout the temperate and warmer regions of the world. Most commonly associated with fields and meadows, some Orthopteran species dwell in caves, the deserts, bogs, and on seashores. Many orthopterans are flightless, and most are not good fliers, but some, such as the locusts, are able to fly in pursuit of food.

Although grasshoppers and crickets are very similar in characteristics they are put in different suborders as they have completely different feeding and mating behaviors. Grasshoppers are diurnal and herbivorous, eating mostly grass. Crickets, on the other hand, are predacious and omnivorous, scavenging dead insects and eating decaying material, fungi and young plants. They also may be distinguished by the dorso-ventral flattening of their body.

A male cricket produces a unique mating call by rubbing their forewings together. Females use this high pitch sound to locate and choose a suitable mating partner. The male fertilizes the eggs and the female finds a safe spot in shallow soil to deposit her egg sack. Her long, extended ovipositor is designed to place eggs deep in the soil for protection.

A male grasshopper chirps (or stridulates) by rubbing their hind leg against the forewing. Like crickets, they have a unique mating call. A male grasshopper approaches a moving female to begin the mating process. Grasshoppers use visual signals, such as the male raising and lowering the hind body and antennae. After the eggs are fertilized, the female places her entire abdomen in the soil to deposit her eggs in the soil at a shallow depth, covering the hole till they hatch.

Grasshoppers & Locusts **Suborder: Caelifera** **(**Short-horned Orthoptera)	**Crickets & Katydids** **Suborder: Ensifera** (Long-horned Orthoptera)
Short, thick antennae. Antennae have less than 20-24 segment and are shorter than their body.	Long, threadlike antennae. Antennae have at least 20-24 segments and are larger in relation to their body.
Diurnal	Nocturnal or crepuscular
Herbivorous. Eat mostly grass.	Scavenge for their food. Omnivores by nature.
Chirp or stridulate by rubbing the hind leg against the forewing. Normally done by the males, though females stridulate too but more quietly.	Chirp or stridulate by rubbing forewings together causing them to vibrate and send out a sound.
Auditory organs on the first abdominal segment	Auditory organs on the tibia of their forelegs
Lack external ovipositor but have thickened valve on tip of abdoman. Place entire abdomen deep in soil or decomposing wood and deposit egg.	Long, extended ovipositors for placing eggs deep into soil or rotting wood.
Wing may be brightly colored. Grasshoppers communicate by flashing their underwings to other grasshoppers when they fly.	Wings may be atrophied or absent. Crickets do not fly.



SOUTHEASTERN LUBBER GRASSHOPPER

Class	Order	Family	*Genus*	*Species*
Insecta	Orthoptera	Romaleidae	*Romalea*	*guttata*

Range:	SE and S central U.S.
Habitat:	Open pinewoods, weedy vegetation and weedy fields
Niche:	Terrestrial, herbivorous, diurnal
Diet:	Wild: plants especially the lily family (Liliaceae) Zoo:

Special Adaptations: Incomplete metamorphosis. Lubber grasshoppers lay their eggs in the late summer or early fall, and the eggs immediately enter diapause, or delayed development, in response to fall/winter conditions. Thus, the eggs are normally laid during winter with hatching occurring in spring. When in the nymph stage, it is smaller than in the adult stage, wingless and completely black with one or more yellow, orange or red stripes. The SE Lubber grasshopper has many ways of defense. The first is its brightly colored warning pattern (aposematism). The insect emits a foul-smelling and foul-tasting foamy secretion from the thorax when it is disturbed. The secretion is dark colored and opaque. They also let off a loud hissing sound that can scare animals. Lubbers are distasteful to predators as their preferred food, members of the lily family, contains allelochemicals that make them distasteful to other animals.

Grasshopper's auditory organs are on the first abdominal segment. They chirp or stridulate by rubbing the hind leg against the forewing. This is normally done by the males, though females stridulate too but more quietly. Females lack external ovipositor but have thickened valve on tip of abdomen. Place entire abdomen deep in soil or decomposing wood and deposit egg. They have chewing mouthparts.

Other: Large size and slow moving with short antennae, it can reach nearly 3 inches. Their wings are half the length of their body and cannot be used for flight. This species can only jump short distances. They do not hop long distances like some grasshoppers. They simply amble along feeding and breeding.

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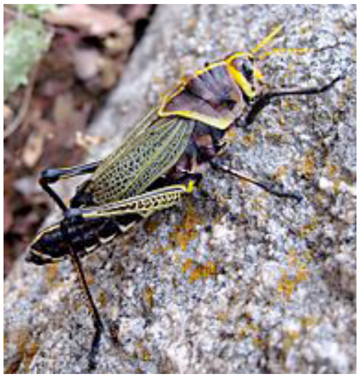


HORSE LUBBER GRASSHOPPER

Class	Order	Family	*Genus*	*Species*
Insecta	Orthoptera	Romaleidae	Taeniopoda	eques

Range:	Southern Arizona and New Mexico and west Texas, down through Mexico to Costa Rica.
Habitat:	Desert shrub and oak areas. Also found around mesquite.
Niche:	Terrestrial, diurnal, omnivores
Diet:	Wild: Various shrubs, broadleaf weeds, and dead insects. Zoo:

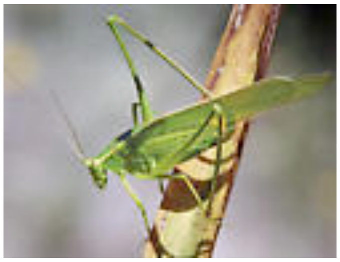
Special Adaptations: Too bulky to properly fly, though long-winged males can coast a short distance. Males make clicking sound apparently with wings. The species is unique in using its black coloration to thermoregulate and in being chemically defended. The aposematic coloration warns vertebrate predators of its unpalatability and allows the grasshopper to roost conspicuously upon desert shrubs.

Other: Large and shiny, mostly black with black and yellow reticulated forewings. Hindwings red with black borders. The bright lines on the head make it look from the side like a horse's head with a bridle, and the overall effect is reminiscent of the armor, harness and other equipment on a medieval knight's horse. The horse lubber grasshopper produces one brood of offspring per year.

http://bugguide.net/node/view/76895

BUSH KATYDID

Class	Order	Family	*Genus*	*Species*
Insecta	Orthoptera	Tettigoniidae	*Scudderia*	*sp.*



Range:	North America from southern Canada southward
Habitat:	Deciduous forests, shrublands, grasslands, and in more lush areas within deserts.
Niche:	Herbivorous, arboreal, nocturnal
Diet:	Wild: foliage of broad-leaved woody deciduous plants Zoo:

Special Adaptations: Males are capable of generating sound and do so by rubbing their wings together (stridulating). Females hear them with an "ear" (tympanum-covered auditory structure) at the base of each front leg's second segment (tibia). The ovipositor is sword-shaped.

Other: The katydids are mostly large, green with long antennae and large wings with the ability to fly.

http://bugguide.net/node/view/7130
http://insects.tamu.edu/fieldguide/aimg15.html

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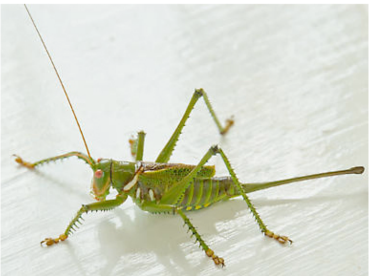
GREATER ARID-LAND KATYDID or RED-EYED DEVIL

Class	Order	Family	*Genus*	*Species*
Insecta	Orthoptera	Tettigoniidae	*Neobarrettia*	*spinosa*



Range:	Central and west Texas, southern New Mexico and southeastern Arizona
Habitat:	Oak-juniper woodlands, desert with mesquite or other brush
Niche:	Terrestrial, nocturnal, omnivorous
Diet:	Wild: various leafs and insects Zoo:

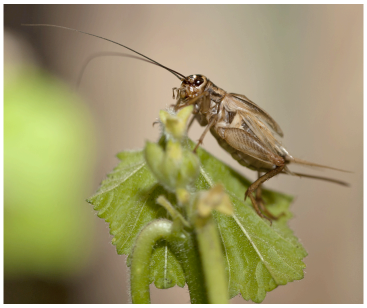
Special Adaptations: Life cycle is one generation per year. They have an aggressive-defensive posture; when approached, they may rear up in a formidable display.

Other: These katydids are large and spiny with reduced or absent wings. They are related to the grasshopper but much longer antennae. The female's ovipositor is quite long and thick. At night they produce a loud resonant phrase repeated continuously at ca. 1/sec.

http://bugguide.net/node/view/35532
http://www.texasento.net/Neobarrettia.htm
http://www.austinbug.com/tettigoniidae3.html

DOMESTIC CRICKET

Class	Order	Family	*Genus*	*Species*
Insecta	Orthoptera	Gryllidae	*Acheta*	*domesticus*



Range:	Worldwide, origin SE Asia
Habitat:	Found in and around buildings and garbage dumps
Niche:	Terrestrial, nocturnal, omnivores (scavengers)
Diet:	Wild: soft plant matter, other insects, and carrion Zoo:

Special Adaptations: Chirp or stridulate by rubbing forewings together causing them to vibrate and send out a sound. The short wings of the cricket produce a higher pitched and more musical song than grasshoppers. Auditory organs on the tibia of their forelegs. Males and females look similar, but females will have a long extended ovipositor emerging from the rear. Eggs are laid on a damp substrate such as sand or moss. Incomplete metamorphosis. Juveniles resemble adults but are smaller and wingless. House crickets take two to three months to complete their life cycle**.**

Other: Long, threadlike antennae. Antennae have at least 20-24 segments and are larger in relation to their body. Wings may be atrophied or absent. Crickets do not fly. All house crickets have long hind wings when they become adult, but they sometimes shed them later.

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FIELD CRICKET

Class	Order	Family	*Genus*	*Species*
Insecta	Orthoptera	Gryllidae	*Gryllus*	*pennsylvanicus*

Range:	Southern Ontario, much of North America
Habitat:	Grasses and low shrubs
Niche:	
Diet:	Wild: seeds, invertebrates Zoo:

Special Adaptations: Field crickets do not survive over the winter but the eggs overwinter.

Other: Males heard chirping on warm summer nights, throughout the country.