

## VELVET ANT

Class	Order	Family	Genus	Species
Insecta	Hymenoptera	Mutillidae	<i>Dasymutilla</i>	<i>spp.</i>

<b>Range:</b>	Warmer regions of the southern and western United States
<b>Habitat:</b>	Usually found in pastures and fields and other open, sandy areas
<b>Niche:</b>	Diurnal mostly, some species nocturnal
<b>Diet:</b>	Wild: Adults feed on nectar and pollen; larva is a parasite of a particular bee or wasp species Zoo: Nectar, pollen, sugar water



**Special Adaptations:** The males are somewhat larger, are densely covered with hair and have two pairs of wings but the females are wingless. The antennae and legs are black. The females are slightly smaller and have a long, needle-like stinger concealed at the tip of the abdomen. The female invades a nest of wasps or bumblebees and lays eggs in the cells of the host. The velvet ant larvae kill and eat the host bee pupa.

**Other:** The velvet ant is not really an ant, but is a hairy parasitic wasp. They differ from true ants as they have dense, brightly colored hair. Females can inflict a painful sting if handled and make a squeaking noise when captured. Because of the severe sting of the female, these are often called "cowkillers." The winged males are harmless.



## RED HARVESTER ANT

Class	Order	Family	Genus	Species
Insecta	Hymenoptera	Mutillidae	<i>Pogonomyrmex</i>	<i>barbatus</i>

<b>Range:</b>	Southwest United States; Kansas and Oklahoma through western Texas into Mexico and southward through New Mexico and Arizona
<b>Habitat:</b>	Grasslands, open areas
<b>Niche:</b>	Omnivorous, terrestrial,
<b>Diet:</b>	Wild: seeds, dead insects Zoo:



**Special Adaptations:** This species has a red colored body with a row of hairs on the underside of the head (psammophore). Mouthparts are for chewing. Red Harvester Ants can be aggressive and have a painful sting that spreads through the lymph nodes and they can also bite ferociously. The mating males and females have wings that they use to fly, usually after a period of rain, to find another mate. This is called a mating swarm. Males die shortly after mating. Females fly until they find the perfect place to nest. After she finds a place to nest, the queen will drop her wings and dig a burrow where she lays her eggs. Larvae hatch from the eggs and change during a series of stages. Larvae are white, legless, and have a small head. The larvae form cocoons and transform into worker ants. These workers begin caring for other developing ants, expanding the nest, and foraging for food.

**Other:** They differ from true ants as they have dense, brightly colored hair. Red harvester ant nests are characterized by a lack of foliage and small pebbles surrounding a hole that is usually at grade. The mounds are typically flat and broad. If plants grow up inside of the disk of clear ground, the ants will chew at the plants until the plants die. Three to eight trails typically lead away from the mound, like "arms". These trails are used by ants to collect and bring food back to the mound. "Scout" ants are the first ones out of the mound every morning. They seek food, and mark their path as they return to the mound to alert the worker ants. The worker ants follow the scent trail and collect the food, primarily seeds. Other ants, called "middens", spend their time cleaning and tending to the mound. All worker ants and middens are female. In favorable conditions the queen can live up to 65 years. After mating the new queen will search for new nest site. She will continue to produce new brood her whole life span.

## HONEY BEE

Class	Order	Family	Genus	Species
Insecta	Hymenoptera	Apidae	<i>Apis</i>	<i>mellifera</i>

<b>Range:</b>	Originally Europe, now naturalized worldwide. Domesticated in U.S. 200 years ago.
<b>Habitat:</b>	Temperate regions.
<b>Niche:</b>	Diurnal; nests in tree hollows or other cavities in nature; commercially bred by humans for pollination. Over 60 food crops are pollinated by honey bees in California alone.
<b>Diet:</b>	Wild: Pollen and nectar Zoo: Pollen, nectar and sugar water



**Special Adaptations:** The honey bees' ovipositor has been modified into a stinger. As with most bees and wasps, it possesses a gland that produces venom, which can be injected by the sting. The hind legs are modified for pollen collection; having a comb, a press and a pollen basket. Their color vision is highly developed as is their sense of smell. Complete metamorphosis with timing of egg 5 days; larva 1-2 weeks, and pupa 1 week. Workers (all female) live for about 4-5 weeks, longer in the winter, drones live about 60 days, and the queen may live from 3-5 years and may lay up to 2,000 eggs per day during the peak season. Pheromones are released when the honey bee is injured which rouses the troops, triggering attack and stinging behavior of the nest mates.

**Other:** The workers perform all the work of the hive and make up to 90% of the hive during the spring and summer. The drones' sole responsibility is to fertilize the queen and they are expelled from the hive in the fall. The honey bee has a very complex social organization and are highly dependent upon each other for survival. The members of a colony function as one organism, dividing the responsibilities and tasks between three castes. Honey bees use dances to communicate where the location of the honey is. Honey bees and Bumblebees are the only social bees. Bees are the primary pollinators of the world.



## PAPER WASP NEST

Class	Order	Family	Genus	Species
Insecta	Hymenoptera	Vespidae	<i>Vespula</i>	<i>spp</i>

<b>Range:</b>	Throughout North America and range as far north as the Arctic Circle
<b>Habitat:</b>	Meadows, gardens, hedges, forest edges
<b>Niche:</b>	Diurnal
<b>Diet:</b>	Wild: Adults, nectar and other insects, larvae with pre-chewed insects & pieces of meat Zoo:



**Special Adaptations:** Paper wasps undergo complete metamorphosis. The young (larvae) are fed proteins such as small insects and spiders, where the adults eat pollen and nectar. The sting can be painful. Because of size and coloration, these wasps are often mistaken for bees; however, wasps are much more aggressive.

**Other:** Some species nest in the ground or at ground level on fallen logs, and tree stumps. In urban settings they can be found under stairs, in fence posts, brick walls and discarded mattresses, carpets, boxes, etc. Other species, the fertilized female builds a nest where she begins laying eggs. Their "paper" nest is made by the wasps scraping fibers from rotten wood or dead plants. These fibers are mixed with their saliva to form the paper. The nests of social bees and wasps are composed of combs. The opening is at the bottom of the nest. An outer envelope, applied in layers with air spaces in between provides excellent insulation to help regulate temperature in the nest.