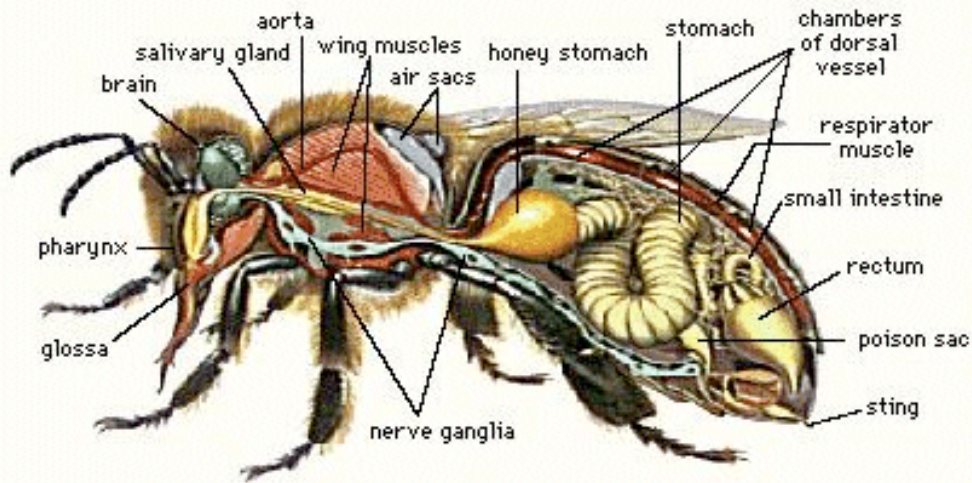
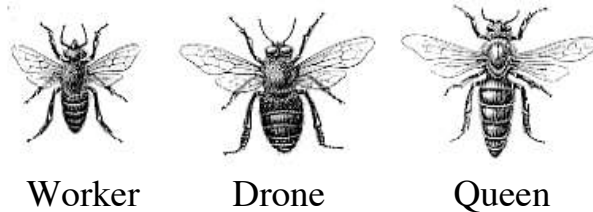


# HoneybeeLives.org

Honeybees are insects, and like all insects, bees have six legs, a three-part body, a pair of antennae, compound eyes, jointed legs, and a hard exoskeleton. The three body parts are the head, thorax, and abdomen (the tail end).



Honeybees live in a highly evolved social structure called a colony, with each bee working towards the good of the hive as a whole. The bees in the colony must be considered as one organism. Within this organism are three distinct kinds of bees.



## Queen Bee

There is only one queen per hive. The queen is the only bee with fully developed ovaries. A queen bee can live for 3-5 years. At the beginning of her life, the queen takes one, or two, "mating flights." She is inseminated by several male (drone) bees, not necessarily from her hive, and requires no other input of sperm during her life. At the height of her laying season each year, from early spring into mid-summer, she lays up to 2000 eggs per day. Fertilized eggs become female (worker bees) and unfertilized eggs become male (drone bees). When she dies, or becomes unproductive, the other bees will "make" a new queen, sometimes two or three, by selecting a young larva and feeding it a diet solely of "royal jelly". For queen bees, it takes 16 days from egg to emergence. The queen bee will only sting another queen bee in a struggle for dominance in the hive

## Worker Bee

All worker bees are female, but they are not able to reproduce. Worker bees live for 4-6 months during the winter season, but only 5-6 weeks during the busy summer months (they literally work themselves to death). Nearly all of the bees in a hive are worker bees. A hive consists of 20,000 - 30,000 bees in the winter, and over 60,000 - 80,000 bees in the summer. The worker bees sequentially take on a series of specific chores during their lifetimes: housekeeper; nursemaid; construction worker; grocer; undertaker; guard; and finally towards the end of their lives they become a forager, collecting pollen and nectar. For worker bees, it takes 21 days from egg to emergence. The worker bee has a barbed stinger that results in her death following stinging, therefore, she can only sting once.

## **Drone Bee**

Drones develop from unfertilized eggs, in comb cells that are larger than those for worker bees. There are only 300-3000 drones in a hive during the summer, and they are banished from the hive to die each autumn. Drones spend most of their lifetime outside of the hive, hovering at great heights, watching for a virgin queen's "mating flight." Because the drone has a barbed sex organ, mating is followed by the death of the drone. Drones do not have a stinger. For drones, it takes 24 days from egg to emergence. There is a mystical presence about the drones, with their enormous eyes, and some believe they are the shamans of the hives.

## **Protecting Our Honeybees and Our Environment**

The Honeybee Genome Project, completed in 2006, shows that Honeybees have more genes dedicated to navigation and communication, and are short on genes for immunity. The health of Honeybees (as well as other pollinators) continues to be compromised by shrinking areas for forage, and the ill effects of pesticides in both commercial and residential use. This is something that everyone can help with. Learn about plants for Honeybee forage. A list can be downloaded from [www.HoneybeeLives.org](http://www.HoneybeeLives.org). Encourage your friends and municipalities to change the way they think about plantings. Do the same for pesticides. Check out the book [A Spring Without Bees](#) by Michael Schacker. Educate yourself and help keep our environment vibrant.

## **Things That Honeybees Give Us**

### **Pollination**

Agriculture depends greatly on the honeybee for pollination. Honeybees account for 80% of all insect pollination. Without such pollination, we would see a significant decrease in the yield of fruits and vegetables. Pollination plays a part in evolution and diversity.

### **Pollen**

Bees collect approximately 66 lbs of pollen per year, per hive. Pollen is the male germ cells produced by all flowering plants for fertilization and plant embryo formation. The Honeybee uses pollen as a food. Pollen is one of the richest and purest natural foods, consisting of up to 35% protein, 10% sugars, carbohydrates, enzymes, minerals, and vitamins A (carotenes), B1 (thiamin), B2 (riboflavin), B3 (nicotinic acid), B5 (panothenic acid), C (ascorbic acid), H (biotin), and R (rutine).

### **Honey**

Honey is used by the bees for food all year round. There are many types, colors and flavors of honey, called varietals honey, depending upon its nectar source. The bees make honey from the nectar they collect from flowering trees and plants. Honey is an easily digestible, pure food. Honey is hydroscopic and has antibacterial qualities. Eating local honey is said to fend off allergies.

### **Beeswax**

Secreted from glands of worker bees of a certain age, beeswax is used by honeybees to build honeycomb. It is used by humans in drugs, cosmetics, artists' materials, furniture polish and candles.

### **Propolis**

Collected by honeybees from trees, the sticky resin is mixed with wax to make a sticky glue. The bees use this to seal cracks and repair their hive. It is used by humans as a health aid, and as the basis for some fine wood varnishes. It has antibacterial qualities.

### **Royal Jelly**

The milky substance that turns an ordinary bee into a Queen Bee. It is made of digested pollen and honey mixed with a chemical secreted from a gland in nursebees' heads. It commands premium prices as an elixir, and is used by some as a fertility stimulant. It is loaded with all of the B vitamins. The problem is that the harvesting of royal jelly kills thousands of Queens and causes honeybee stress in the service to human vanity.

### **Bee Venom**

The "ouch" part of the honeybee. Honeybees rarely sting, and do so only when provoked to defend the colony, or are stepped on. Although sharp pain and some swelling and itching are natural reactions to the formic acid in a honeybee sting, only a small percentage of individuals are highly allergic to bee venom. "Bee venom therapy" is widely practiced overseas and by some in the US to address health problems such as arthritis, neuralgia, high blood pressure, high cholesterol and MS.

### **Beauty and Joy**

Watching and listening to Honeybees as they work is an amazing gift of life. Beekeeping teaches us many things.