



# About Bees

## Lifecycle of the Honeybee

*(Apis mellifera)*

by Ron Schwartz



# Some Bee Trivia

- Think about bees as a superorganism.
- The honeybee is not native to North America.
- Without honeybees, about 1/3 of the food we enjoy would not exist.
- During her life (~ 40 days) a honey bee will gather about 1/12 teaspoon of honey.
- Bees must go to two million flowers to gather 1 pound of honey and will travel up to 3 miles to do it.



Honeybees must visit around 6 million flowers to make a quart of honey (~ 3 pounds)



A quart of honey is the life's work of about 2300 bees.

# Hive Inhabitants (the desirable ones)

**honeybee**  
(*Apis mellifera*)



worker



queen



drone

# The Queen

- Develops from fertilized egg
- Feed special diet (royal jelly)
- Normally one per hive
- Her function is to lay eggs (and that's about it)
- Average lifespan is 3 to 4 years
- Emits pheromones important for hive cohesiveness



# Workers



- Develop from fertilized eggs
- Do not get special diet
- ~ 10,000 per hive in winter,  
~ 50,000 to 60,000 per hive in  
spring and summer
- Do ALL the work in the hive
- Average lifespan is several  
weeks in summer (~ 40 days),  
several months in winter

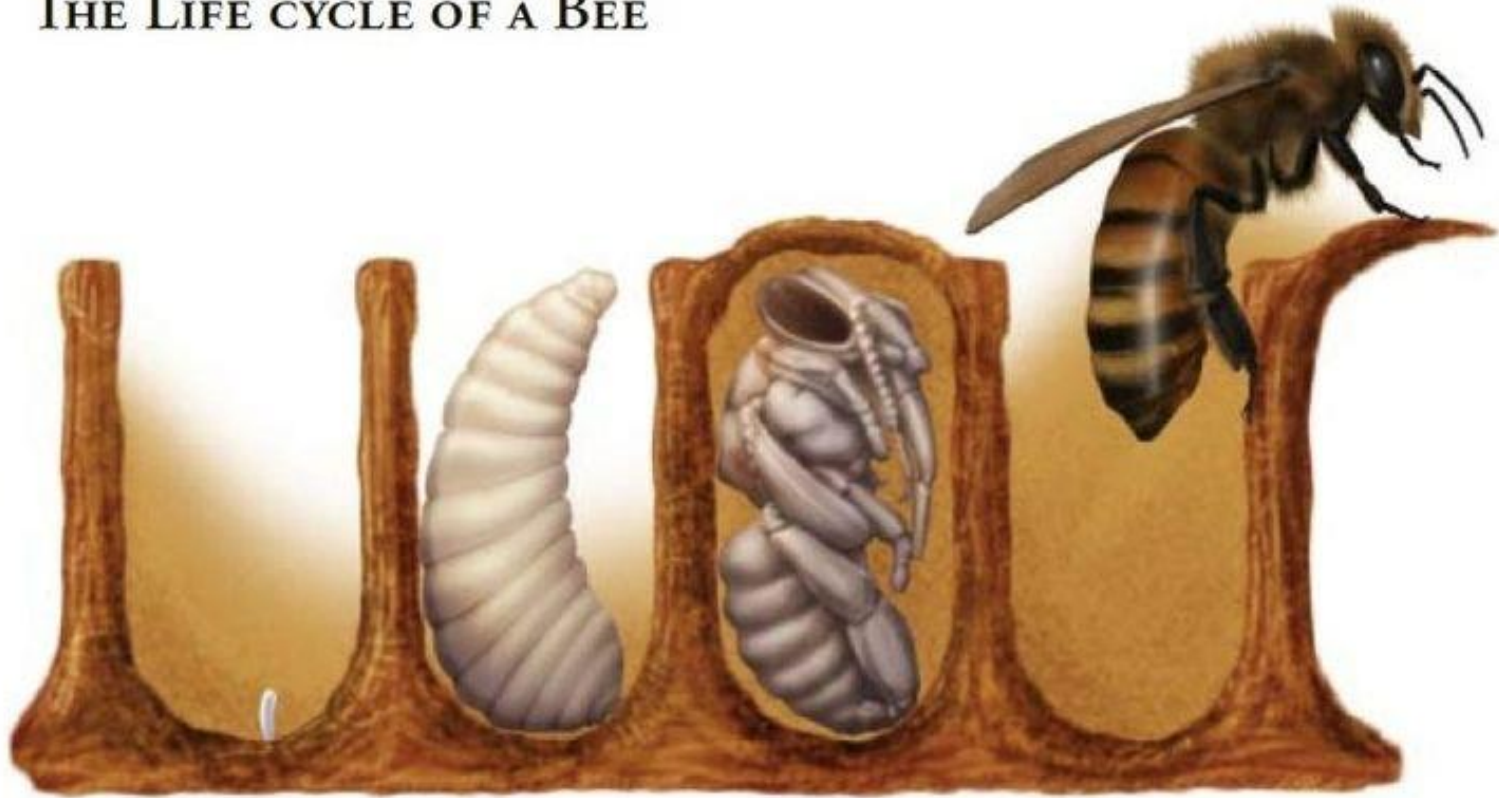
# Drones



- Develop from unfertilized eggs
- Several hundred per hive in summer, zero in winter
- Function is to mate with a queen (and that's it as far as we know)
- Lifespan is about 4 months or until they mate
- Kicked out of the hive to die in the fall (poor guys)

# Metamorphosis

## THE LIFE CYCLE OF A BEE



Egg

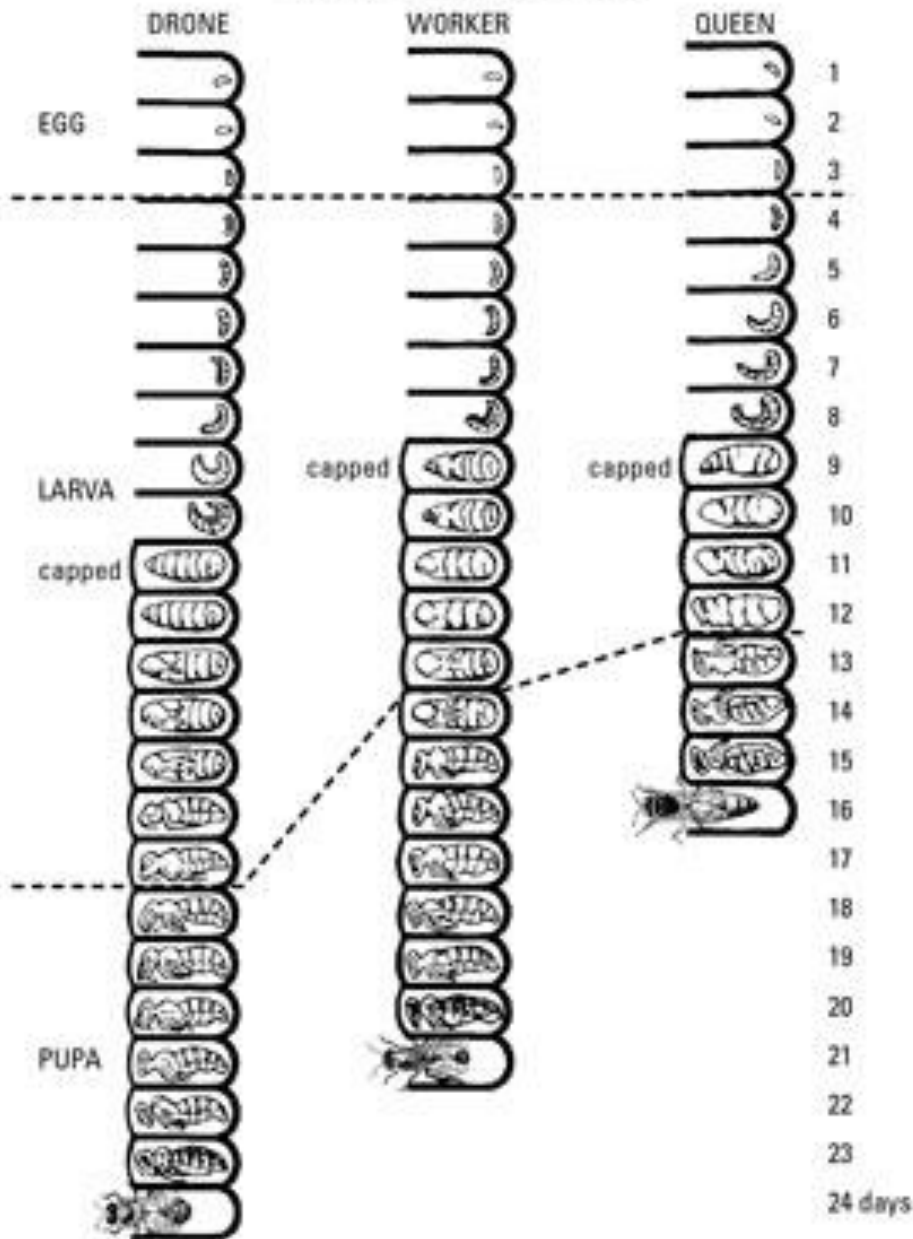
Larva

Pupa

Adult



## The Honey Bee Life Cycle



The metamorphosis timeline depends on the type of bee.

### Days to maturity

- Queen 16 days
- Worker 21 days
- Drone 24 days

# Her Majesty, the Queen

- Emerges as an adult at day 16
- Spends a few days maturing (and “taking care” of competition)
- Goes on a mating flight or two during which she will mate with 15 – 20 drones
- Spends the rest of her life in the hive laying eggs (unless she becomes part of a swarm)

# The Woeful Drone

- Emerges as an adult at day 24
- Hangs around the hive eating or trying to pick up chicks at a drone mating area (the bee world's bar)
- If he “gets lucky” at the bar he dies as his sex organ is torn out during the mating process (ouch!)
- If he doesn't mate, he gets kicked out in the cold come fall

# The Industrious Worker

The worker has many varied tasks that follow a path of increasing complexity with some tasks overlapping.

- Emerges as an adult at day 21
- Housekeeping (days 1 – 3): eats and cleans out cells for new eggs
- Undertaking (days 3 – 16): removing dead bees and dead or diseased brood

# The Industrious Worker

- Nursery work (days 4 – 12): feeding developing larvae
- Attending the queen (days 7 -12): feeding and grooming the queen
- Storing food (days 12 – 18): taking nectar and pollen from field bees and storing it in cells
- Fanning (days 12 – 18): fanning controls hive climate, dries honey and distributes pheromones for communication

# The Industrious Worker

- Construction (days 12 – 35): use wax to build comb, cap cells of ripened honey and cap cells of developing pupae
- Guard duty (days 18 - 21): guard against intruding bees or other pests (including beekeepers)
- Foraging (days 22 – 42): during this time they forage for nectar, pollen, water and propolis (“bee glue” made from tree resin)

# The End (the beginning actually)

There is much, much more to learn about bees and bee behavior. Sources of information include:

- Books: Beekeeping for Dummies is my favorite
- Internet: Google is your friend
- Other beekeepers: River Valley Beekeepers Association ([rivervalleybeekeepers.org](http://rivervalleybeekeepers.org))
- Bees: watch them (but not from the front of their hive)

