

honey bee

By Henry Touray

Introduction

For my project I have chosen to research Bees. I chose to find out about the bee because bees have been in the news lately. Lots of hives have died out and scientists are trying to find out how they are dying.

Bees are major pollinators for flowers. If they are not pollinated the flowers wont produce any fruits and seed.



Life would not be the same without apples and pears, melons, onions, carrots, turnips, cotton, almonds, avocado, blueberries, cherries, cranberries, cucumber, sunflowers, strawberries and plums.

Up to a third of all our food depends on bees for pollination.

What are bees

Bees are insects. Insects have three pairs of legs and three body parts, the head, the thorax and the abdomen.

Bees are specially adapted to what they eat so they have grown a straw (proboscis) to eat with.

Insects are the most successful creatures in the animal kingdom. If each human were to share the insects out evenly there would be more than a billion each.

There is fossil evidence to prove that bees were around nearly 2-3million years ago.

This fossil from China shows a bee that died during the time of the dinosaurs.

Insects were the first creatures to fly.

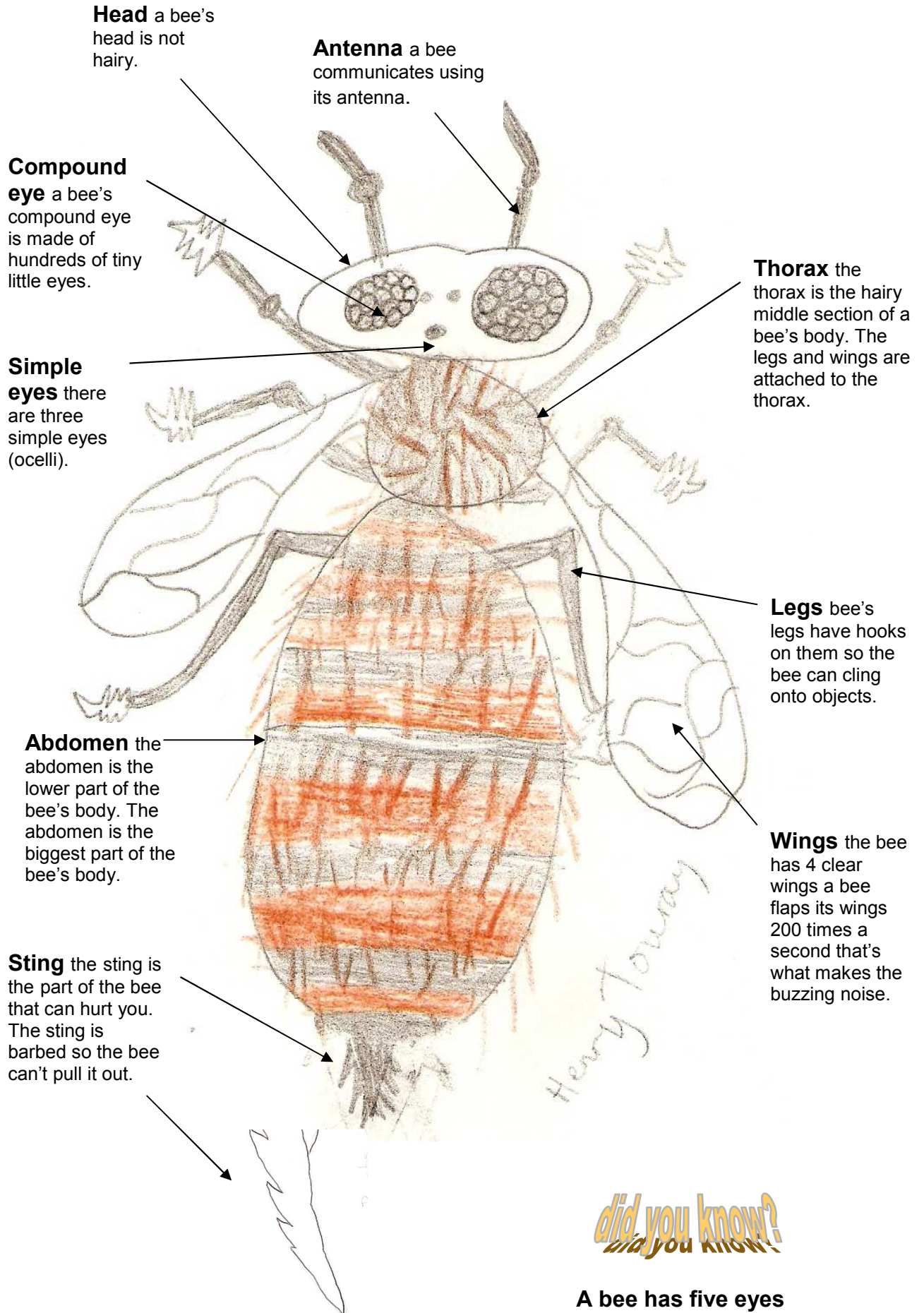
Bees as well as wasps and ants are in the hymenoptera family. Hymenoptera means membranous wings



did you know?
did you know?

**Bees evolved from a
type of wasp.**

Parts of a bee's body



Who is in the hive

During the summer an average bee hive will contain

a single queen and about:

250 drone bees

40,000 worker bees that are house bees

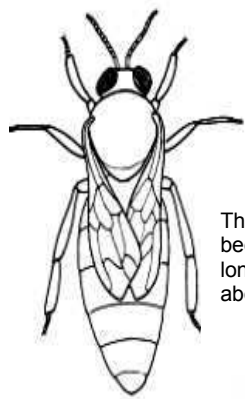
20,000 worker bees that are foraging

5,000–7,000 eggs

7,000-11,000 larvae that are still being fed by the worker house bees

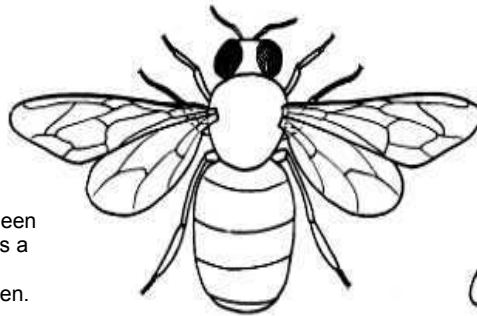
16,000 – 24,000 larvae that are changing to adults in sealed cells

Queen bees can chose to have male or female children.



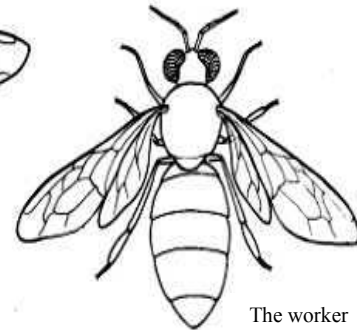
The queen
bee has a
longer
abdomen.

Queen



The drone
doesn't
have a
sting.

Drone



The worker
has a
barbed
sting.

Worker

Queen

The queen stays in the hive for the rest of her life after mating. The queen will live for 3-4 years. House worker bees look after the queen bee as she is their mother. The queen lays all the eggs. All the bees in the hive are her children.

Drone

The drone is a male bee they are bigger. They come from unfertilised eggs which the queen lays. They don't have a use in the nest and the worker bees force them out of the nest in the autumn. Every day they go out looking for a mate if they do find one they die after mating.

Worker



The worker is a female bee and they do all the work. First they are a house bee and look after the queen and the larvae.

In their first three weeks the worker bee will stay in the nest and feed the queen, clean out the chambers or brood cells, feed the young and produce wax. They also keep the cells at a temperature of 95 degrees fahrenheit.

When a worker bee is able to go outside these are the things they do

- Guard the nest
- Collect nectar
- Get resin to repair the nest
- Collect pollen
- Collect water

When the worker becomes a field bee they only live for 3-4 weeks because they work themselves to death.



Bee collecting water

Field bees collect pollen in their pollen pouch and they also have a honey stomach that they store the nectar in to make honey with. The bees will only come back to the nest when their honey stomach is full. They visit about 2,000 flowers until their honey stomach is full.

In their lifetime they can produce 1/12th of a teaspoon of honey.

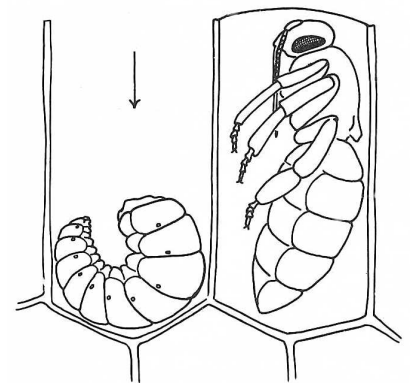
did you know?
did you know?

Honey bees communicate with each another by "dancing".

Life Cycle



- A Queen bee can lay 1000 eggs in a day.
- The Queen lays one egg in each cell.
- The eggs are laid in special brood cells and kept at a constant temperature.
- If an egg is fertilised it will become a Worker bee, if it is unfertilised it will become a Drone bee.
- The eggs hatch into larvae after about 4 days
- When the Worker bees want a new Queen, they just feed one of the Larvae royal jelly instead of beebread. Royal Jelly is a mixture of honey, pollen and a chemical that comes from a gland in the worker bee's head.
- the Larvae pupate a few days later a Worker bee emerges.
- It takes a Queen 16 days to hatch.
- It takes a Drone 24 days to hatch.
- It takes a Worker 21 days to hatch.



Honey

Bees store honey to keep over winter so they can eat it because they do not go out to collect nectar in the winter because it is too cold.

We know that people have been eating honey for 9,000 years because of cave paintings in Spain



The paintings show people collecting wild honey. I once watched a programme where people were collecting wild honey from a cliff. They were climbing a rope ladder and using a pole with a knife on the end to cut the honeycomb.

During the times of the Pharoes people started domesticating bees and the Egyptians would take their bees down the river Nile on rafts to different places to pollinate their plants.

For centuries people have kept bees in man made bee hives like these ones.



Making traditional straw skeps.



14th century picture of domestic bees

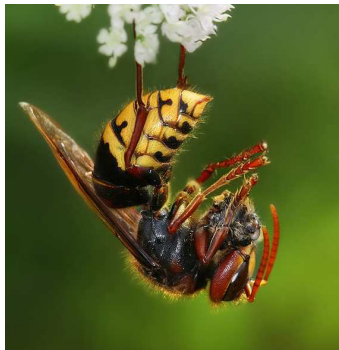
did you know?
did you know?

**Bacteria can not live in honey.
People used to put honey on
wounds.**

Food chain

Bees eat nectar and pollen. Bees have a positive effect on flowers because the flowers want the bees to come to them for them to pollinate them.

Bees have lots of enemies including spiders that build webs, crab spiders, bears, wasps ants hornets and insect eating birds.



This is a hornet eating a honey bee



Crab spider



Bee eater bird

The hornets come and take the bees larvae and feed them to their larvae.

Bees try to put on as good a fight as they can against enemies. They use their sting and they fight to protect their nest.

We are one of the bees main enemies because we catch them, put them in boxes and nick their honey. We also nick their royal jelly their wax and the Japanese nick their Larvae!



Honey bees surrounding 2 hornets they can kill the hornets because of their body heat



did you know?
did you know?

In Japan they eat bee larvae as a delicacy

Why are bees dying

Honey bees are very important to man because they are the only insects that provide food for us.

Honey bees are dying out varroa mite is one of the main killers. The bees are getting weaker because of the mite and could not survive the last few winters.

Varroa mite are crumpling up the bees wings and sucking their blood. Scientists are trying to find out other reasons why the bees are dying.



Varroa mite
mite is quite **BIG**.

as you can see the Varroa

This picture shows the varroa mite on a bee pupa.

Interesting Stuff

- A marriage contract in ancient Egypt required the bridegroom to promise to supply his bride with honey throughout their marriage.
- A honey bee will visit 50 to 100 flowers during a collection trip.
- The average honey bee will actually make only one twelfth of a teaspoon of honey in its lifetime.
- It requires 1 million bee hives, 40 billion bees to pollinate 600,000 acres of almond orchards.
- Honey is the only food that contains every nutrient that a human needs to survive, including water.
- Honey bees visit about 2 million flowers to make one pound of honey.
- there are 20,000 types of bee.
- 1 million bee hives are taken to California to pollinate 600,000 acres of almond trees.