

Basic Honey Bee Biology and Colony Behavior

Terms and Concepts

Abscond – the action of all bees leaving the hive due to extreme stress, disease, pests, or danger, such as a fire.

Apis mellifera - the genus and species of the honey bee found in the United States.

Beebread or Brood food – a mixture of pollen and honey used as food by bees.

Beeswax – a complex mixture of organic compounds secreted by eight glands on the ventral side of the worker bee's abdomen; used to mold six-sided cells into comb.

Brood - the term used for all stages of developing bees (egg, larva, pupa, emerging adult)

Brood chamber -the part of the hive where brood is reared.

Cappings (Wax) - the thin pure beeswax covering cells filled with honey.

Caste- category of bee defined by behavioral characteristics – queen, nurse bee, worker bee, scout bee, drone.

Cell – a single six-sided(hexagonal) compartment of honey comb used to rear brood or store honey and pollen.

Cleansing flight – refers to when bees fly out of the hive to defecate after periods of confinement.

Cluster – a mass of bees such as a swarm, or when the bees huddle together in cool weather.

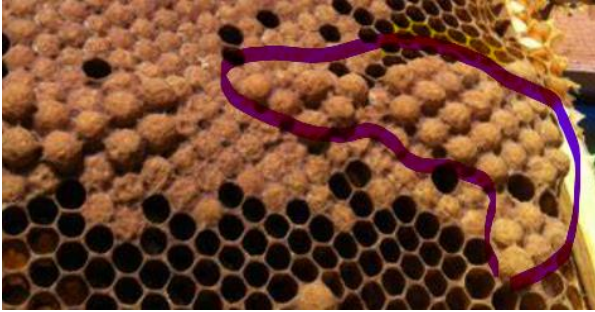
Colony/Hive -adult bees and developing brood living together including the hive boxes they are living in.

Comb – a sheet of six-sided cells made of beeswax by honey bees used to rear brood or store honey and pollen.



Drone – the male honey bee.

Drone comb – comb measuring about four cells per inch in which the queen lays unfertilized eggs to become drones. Drone comb has a domed or raised cap.



Drone Congregation Area (DCA) - a neutral area where drones and virgin queens gather to mate 30' to 300' in open air.

Egg- first stage of developing bee a small rice-like white egg in the bottom of a cell

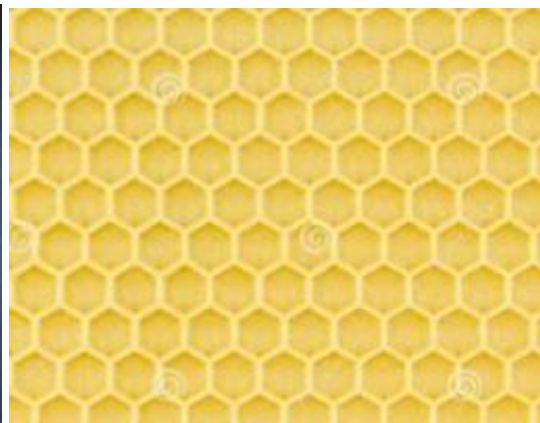
Foraging Bees – worker bees that work (forage) outside the hive, collecting nectar, pollen, water, and propolis. Sometimes as far away as 5 miles.

Foundation – a thin plastic or beeswax sheet that has hexagon cells stamped into it to encourage the bees to draw out the comb. The foundation is inserted into the frames.

Frame – a four-sided wood/plastic frame (a top bar, a bottom bar and 2 side bars) designed to hold foundation or drawn comb.



Frames



Foundation-enlarged

Honey – a sweet, sticky liquid produced by bees from the nectar of flowers, composed of glucose and fructose sugars dissolved in about 18 percent water; contains small amounts of sucrose, mineral matter, vitamins, protein, and enzymes.

Hypopharyngeal Glands- two organs in the worker bee head that produce royal and worker jelly for feeding open brood

Larva(e)- mid-stage of developing bee, period of greatest nutritional need and growth; a white, legless, grublike insect,

Nectar – a sweet liquid secreted by the nectaries of plants to attract insects

Nucleus Colony “Nuc” – a small 2-5 frame hive of bees used primarily for starting new colonies.

Nurse Bees – young bees, three to ten days old that feed and take care of developing brood.

Orientation flight – the first flight of field bee flying around the front of the hive to imprint the look and location of their home and surrounding in relation to the sun.

Propolis- made by bees from tree resins mixed with wax and other secretions. A sort of superglue material used to repair, fill gaps, and otherwise maintain the hive. Antibacterial and antimicrobial

Pupa(e) -last stage of developing bee, capped with beeswax. Bee completes metamorphosis

Queen Cage – a small screened container used for shipping and/or introduction of a queen bee into a colony.

Queen Cell – a special elongated cell, in which the queen is reared. Usually found hanging down from the comb in a vertical position, either between frames or from the bottom of a frame



Queen Cup – a round, cup-shaped structure that worker bees build on the bottom of frames to accommodate a future queen bee. A queen bee lays a fertilized egg in the cup then the workers build out the rest of the queen cell. Queen cups are often a sign that the hive is preparing to swarm.



Queen Excluder -a wire or plastic grid that allows worker bees to pass through, but no the larger queen bee thus restricting the movement of the queen within the hive.

Pheromones - a chemical scent released by the bee that stimulates a behavioral response (Queen, Alarm, Brood, Nasonov “Come Hither” etc.)

Pollen - the powdery substance that is the male reproductive cell of flowers and bees use as a protein food source.

Pollen Baskets – located on the rear legs of a bee where pollen is gathered and stored during flight.

Royal jelly -the substance that is secreted from glands in a worker bee’s head and is used to feed the brood.

Spermatheca – is an organ in the queen bee that store the drone’s sperm until it is released when an egg is laid in a cell.

Honey/Shallow Super – the box that is used to collect surplus honey. The box is 5 11/16” deep

Supersedure – the natural occurrence of a colony replacing an old or ailing queen with a new queen.

Supersedure cell – a cell containing a queen larva destined to replace an old queen.

Superorganism – the colony of bees function as a single organism with each bee in the colony likened to a cell within an animal.

Trophallaxis – the direct transfer of liquid or food from one bee to another

Virgin Queen – a new that has not mated with a drone.