

# Beeginner Beekeeping: The Basics of Apiculture



## Glossary of Terms

**Abdomen** - the posterior or third region of the body of a bee enclosing the honey stomach, true stomach, intestine, sting, and reproductive organs.

**Adulterated honey** - any product labeled "Honey" or "Pure Honey" that contains ingredients other than honey but does not show these on the label. (Suspected mislabeling should be reported to the Food and Drug Administration.)

**Afterswarm** - a small swarm, usually headed by a virgin queen, which may leave the hive after the first or prime swarm has departed.

**American foulbrood** - a brood disease of honey bees caused by the spore-forming bacterium, *Bacillus larvae*.

**Anaphylactic shock** - constriction of the muscles surrounding the bronchial tubes of a human, caused by hypersensitivity to venom and resulting in sudden death unless immediate medical attention is received.

**Apiary** - colonies, hives, and other equipment assembled in one location for beekeeping operations; bee yard.

**Apiculture** - the science and art of raising honey bees.

**Apis mellifera** - scientific name of the honey bee found in the United States.

**Automatic uncapper** - automated device that removes the cappings from honey combs, usually by moving heated knives, metal teeth, or flails.

**Bacillus larvae** - the bacterium that causes American foulbrood

**Bee blower** - an engine with attached blower used to dislodge bees from combs in a honey super by creating a high-velocity, high-volume wind.

**Bee bread** - a mixture of collected pollen and nectar or honey, deposited in the cells of a comb to be used as food by the bees.

**Bee brush** - a brush or whisk broom used to remove bees from combs.

**Bee escape** - a device used to remove bees from honey supers and buildings by permitting bees to pass one way but preventing their return.

**Beehive** - a box or receptacle with movable frames, used for housing a colony of bees.

**Bee metamorphosis** - the three stages through which a bee passes before reaching maturity: egg, larva, and pupa.

**Bee space** - 1/4 to 3/8-inch space between combs and hive parts in which bees build no comb or deposit only a small amount of propolis.

**Beeswax** - a complex mixture of organic compounds secreted by special glands on the last four visible segments on the ventral side of the worker bee's abdomen and used for building comb. Its melting point is from 143.6 to 147.2 degrees F.

**Bee tree** - a tree with one of more hollows occupied by a colony of bees.

**Bee veil** - a cloth or wire netting for protecting the beekeeper's head and neck from stings.

**Bee venom** - the poison secreted by special glands attached to the stinger of the bee.

**Boardman feeder** - a device for feeding bees in warm weather, consisting of an inverted jar with an attachment allowing access to the hive entrance.

**Bottom board** - the floor of a beehive.

**Brace comb** - a bit of comb built between two combs to fasten them together, between a comb and adjacent wood, or between two wooden parts such as top bars.

**Brood** - bees not yet emerged from their cells: eggs, larvae, and pupae.

**Brood chamber** - the part of the hive in which the brood is reared; may include one or more hive bodies and the combs within.

**Capped brood** - pupae whose cells have been sealed with a porous cover by mature bees to isolate them during their nonfeeding pupal period; also called sealed brood.

**Capping melter** - device used to liquefy the wax from cappings as they are removed from honey combs.

**Cappings** - the thin wax covering of cells full of honey; the cell coverings after they are sliced from the surface of a honey-filled comb.

**Castes** - the three types of bees that comprise the adult population of a honey bee colony: workers, drones, and queen.

**Cell** - the hexagonal compartment of a honey comb.

**Cell bar** - a wooden strip on which queen cups are placed for rearing queen bees.

**Cell cup** - base of an artificial queen cell, made of beeswax or plastic and used for rearing queen bees.

**Chilled brood** - immature bees that have died from exposure to cold; commonly caused by mismanagement.

**Chunk honey** - honey cut from frames and placed in jars along with liquid honey.

**Clarifying** - removing visible foreign material from honey or wax to increase its purity.

**Cluster** - a large group of bees hanging together, one upon another.

**Colony** - the aggregate of worker bees, drones, queen, and developing brood living together as a family unit in a hive or other dwelling.

**Comb** - a mass of six-sided cells made by honey bees in which brood is reared and honey and pollen are stored; composed of two layers united at their bases.

**Comb foundation** - a commercially made structure consisting of thin sheets of beeswax with the cell bases of worker cells embossed on both sides in the same manner as they are produced naturally by honey bees.

**Comb honey** - honey produced and sold in the comb, in either thin wooden sections (4 x 4 inches or 4 x 5 inches) or circular plastic frames.

**Creamed honey** - honey which has been allowed to crystallize, usually under controlled conditions, to produce a tiny crystal.

**Crimp-wired foundation** - comb foundation into which crimp wire is embedded vertically during foundation manufacture.

**Cross-pollination** - the transfer of pollen from an anther of one plant to the stigma of a different plant of the same species.

**Crystallization** - see "Granulation."

**Cut-comb honey** - comb honey cut into various sizes, the edges drained, and the pieces wrapped or packed individually

**Dextrose** - one of the two principal sugars found in honey; forms crystals during granulation. Also known as glucose.

**Dividing** - separating a colony to form two or more units.

**Division board feeder** - a wooden or plastic compartment which is hung in a hive like a frame and contains sugar syrup to feed bees.

**Double screen** - a wooden frame, 1/2 to 3/4 inch thick, with two layers of wire screen to separate two colonies within the same hive, one above the other. An entrance is cut on the upper side and placed to the rear of the hive for the upper colony.

**Drawn combs** - combs with cells built out by honey bees from a sheet of foundation.

**Drifting of bees** - the failure of bees to return to their own hive in an apiary containing many colonies. Young bees tend to drift more than older bees, and bees from small colonies tend to drift into larger colonies.

**Drone** - the male honey bee.

**Drone comb** - comb measuring about four cells per linear inch that is used for drone rearing and honey storage.

**Drone layer** - an infertile or unmated laying queen.

**Dwindling** - the rapid dying off of old bees in the spring; sometimes called spring dwindling or disappearing disease.

**Dysentery** - an abnormal condition of adult bees characterized by severe diarrhea and usually caused by starvation, low-quality food, moist surroundings, or nosema infection.

**European foulbrood** - an infectious brood disease of honey bees caused by streptococcus pluton.

**Extracted honey** - honey removed from the comb by centrifugal force.

**Fermentation** - a chemical breakdown of honey caused by sugar-tolerant yeast and associated with honey having high moisture content.

**Fertile queen** - a queen inseminated instrumentally or mated with a drone, which can lay fertilized eggs.

**Field bees** - worker bees at least three weeks old that work in the field to collect nectar, pollen, water, and propolis.

**Follower board** - a thin board used in place of a frame usually when there are fewer than the normal number of frames in a hive.

**Frame** - four pieces of wood designed to hold honey comb, consisting of a top bar, a bottom bar, and two end bars.

**Fructose** - the predominant simple sugar found in honey; also known as levulose.

**Fumidil-B** - the trade name for Fumagillin, an antibiotic used in the prevention and suppression of nosema disease.

**Fume board** - a rectangular frame, the size of a super, covered with an absorbent material such as burlap, on which is placed a chemical repellent to drive the bees out of supers for honey removal.

**Glucose** - see "Dextrose."

**Grafting** - removing a worker larva from its cell and placing it in an artificial queen cup in order to have it reared into a queen.

**Grafting tool** - a needle or probe used for transferring larvae in grafting of queen cells.

**Granulation** - the formation of sugar (dextrose) crystals in honey.

**Hive** - a man-made home for bees.

**Hive body** - a wooden box which encloses the frames.

**Hive stand** - a structure that supports the hive.

**Hive tool** - a metal device used to open hives, pry frames apart, and scrape wax and propolis from the hive parts.

**Honey** - a sweet viscid material produced by bees from the nectar of flowers, composed largely of a mixture of dextrose and levulose dissolved in about 17 percent water; contains small amounts of sucrose, mineral matter, vitamins, proteins, and enzymes.

**Honeydew** - a sweet liquid excreted by aphids, leafhoppers, and some scale insects that is collected by bees, especially in the absence of a good source of nectar.

**Honey extractor** - a machine which removes honey from the cells of comb by centrifugal force.

**Honey flow** - a time when nectar is plentiful and bees produce and store surplus honey.

**Honey gate** - a faucet used for drawing honey from drums, cans, or extractors.

**Honey house** - building used for extracting honey and storing equipment.

**Honey pump** - a pump used to transfer honey from a sump or extractor to a holding tank or strainer.

**Honey stomach** - an organ in the abdomen of the honey bee used for carrying nectar, honey, or water.

**Honey sump** - a clarifying tank between the extractor and honey pump for removing the coarser particles of comb introduced during extraction.

**Increase**- to add to the number of colonies, usually by dividing those on hand.

**Inner cover** - a lightweight cover used under a standard telescoping cover on a beehive.

**Instrumental insemination** - the introduction of drone spermatozoa into the genital organs of a virgin queen by means of special instruments.

**Invertase** - an enzyme produced by the honey bee which helps to transform sucrose to dextrose and levulose.

**Larva (plural, larvae)** - the second stage of bee metamorphosis; a white, legless, grub like insect.

**Laying worker** - a worker which lays infertile eggs, producing only drones, usually in colonies that are hopelessly queenless.

**Levulose** - see "Fructose."

**Mating flight** - the flight taken by a virgin queen while she mates in the air with several drones.

**Mead** - honey wine.

**Migratory beekeeping** - the moving of colonies of bees from one locality to another during a single season to take advantage of two or more honey flows. Or for pollination service.

**Nectar** - a sweet liquid secreted by the nectaries of plants; the raw product of honey.

**Nectaries** - the organs of plants which secrete nectar, located within the flower (floral nectaries) or on other portions of the plant (extrafloral nectaries).

**Nosema** - a disease of the adult honey bee caused by the protozoan *Nosema apis*.

**Nucleus (plural, nuclei)** - a small hive of bees, usually covering from two to five frames of comb and used primarily for starting new colonies, rearing or storing queens; also called "nuc."

**Nurse bees** - young bees, three to ten days old, which feed and take care of developing brood.

**Observation hive** - a hive made largely of glass or clear plastic to permit observation of bees at work.

**Out-apiary** - an apiary situated away from the home of the beekeeper.

**Package bees** - a quantity of adult bees (2 to 5 pounds), with or without a queen, contained in a screened shipping cage.

**Paralysis** - a virus disease of adult bees which affects their ability to use legs or wings normally.

**Parthenogenesis** - the development of young from unfertilized eggs. In honey bees the unfertilized eggs produce drones.

**PDB (Paradichlorobenzene)** - crystals used to fumigate combs against wax moth.

**Piping** - a series of sounds made by a queen, frequently before she emerges from her cell.

**Play flight** - short flight taken in front of or near the hive to acquaint young bees with their immediate surroundings; sometimes mistaken for robbing or preparation for swarming.

**Pollen** - the male reproductive cell bodies produced by anthers of flowers, collected and used by honey bees as their source of protein.

**Pollen basket** - a flattened depression surrounded by curved spines or hairs, located on the outer surface of the bee's hind legs and adapted for carrying pollen gathered from flowers or propolis to the hive.

**Pollen paddies** - moist mixtures of either pollen supplements or substitutes fed to the bees in early spring to stimulate brood rearing.

**Pollen substitute** - any material such as soybean flour, powdered skim milk, brewer's yeast, or a mixture of these used in place of pollen to stimulate brood rearing.

**Pollen supplement** - a mixture of pollen and pollen substitutes used to stimulate brood rearing in periods of pollen shortage.

**Pollen trap** - a device for removing pollen loads from the pollen baskets of incoming bees.

**Pollination** - the transfer of pollen from the anthers to the stigma of flowers.

**Pollinator** - the agent that transfers pollen from an anther to a stigma: bees, flies, beetles, etc.

**Prime swarm** - the first swarm to leave the parent colony, usually with the old queen.

**Proboscis** - the mouthparts of the bee that form the sucking tube or tongue.

**Propolis** - sap or resinous materials collected from trees or plants by bees and used to strengthen the comb, close-up cracks, etc.; also called bee glue.

**Pupa** - the third stage in the development of the honey bee, during which the organs of the larva are replaced by those that will be used by an adult.

**Queen** - a fully developed female bee, larger and longer than a worker bee.

**Queen cage** - a small cage in which a queen and three or four worker bees may be confined for shipping and/ or introduction into a colony.

**Queen cage candy** - candy made by kneading powdered sugar with invert sugar syrup until it forms a stiff dough; used as food in queen cages.

**Queen cell** - a special elongated cell, resembling a peanut shell, in which the queen is reared. It is usually an inch or more long, has an inside diameter of about 1/3 inch, and hangs down from the comb in a vertical position.

**Queen clipping** - removing a portion of one or both front wings of a queen to prevent her from flying.

**Queen cup** - a cup-shaped cell made of beeswax or plastic which hangs vertically in a hive and which may become a queen cell if an egg or larva is placed in it and bees add wax to it.

**Queen excluder** - metal or plastic device with spaces that permit the passage of workers but restrict the movement of drones and queens to a specific part of the hive.

**Queen substance** - pheromone material secreted from glands in the queen bee and transmitted throughout the colony by workers to alert other workers of the queen's presence.

**Rabbit** - a narrow piece of folded metal fastened to the inside upper end of the hive body from which the frames are suspended.

**Rendering wax** - the process of melting combs and cappings and removing refuse from the wax.

**Resmethrin (SBP-1382)** - a synthetic pyrethroid insecticide used to kill diseased honey bee colonies.

**Robbing** - stealing of nectar, or honey, by bees from other colonies.

**Royal jelly** - a highly nutritious glandular secretion of young bees, used to feed the queen and young brood.

**Sacbrood** - a brood disease of honey bees caused by a virus.

**Scout bees** - worker bees searching for a new source of pollen, nectar, propolis, water, or a new home for a swarm of bees.

**Sealed brood** - see "Capped brood."

**Self-pollination** - the transfer of pollen from anther to stigma of the same plant.

**Skep** - a beehive made of twisted straw without movable frames.

**Slumgum** - the refuse from melted comb and cappings after the wax has been rendered or removed.

**Smoker** - a device in which burlap, wood shavings, or other materials are slowly burned to produce smoke which is used to subdue bees.



**Solar wax melter** - a glass-covered insulated box used to melt wax from combs and cappings by the heat of the sun.

**Spermatheca** - a special organ of the queen in which the sperm of the drone is stored.

**Spur embedder** - a device used for mechanically embedding wires into foundation by employing hand pressure.

**Sting** - the modified ovipositor of a worker honey bee used as a weapon of offense.

**Streptococcus pluton** - bacterium that causes European foulbrood.

**Sucrose** - principal sugar found in nectar.

**Super** - any hive body used for the storage of surplus honey. Normally it is placed over or above the brood chamber.

**Supersedure** - a natural replacement of an established queen by a daughter in the same hive. Shortly after the young queen commences to lay eggs, the old queen disappears.

**Surplus honey** - honey removed from the hive which exceeds that needed by bees for their own use.

**Swarm** - the aggregate of worker bees, drones, and usually the old queen that leaves the parent colony to establish a new colony.

**Swarming** - the natural method of propagation of the honey bee colony.

**Swarm Catcher** - a hive placed to attract stray swarms.

**Swarm cells** - queen cells usually found on the bottom of the combs before swarming.

**Terramycin** - an antibiotic used to prevent American and European foulbrood.

**Tested queen** - a queen whose progeny shows she has mated with a drone of her own race and has other qualities which would make her a good colony mother.

**Thin super foundation** - a comb foundation used for comb honey or chunk honey production which is thinner than that used for brood rearing.

**Transferring** - the process of changing bees and combs from common boxes to movable frame hives.

**Travel stain** - the dark discoloration on the surface of comb honey left on the hive for some time, caused by bees tracking propolis over the surface.

**T-super** - a comb honey super with T-shaped strips supporting the sections to provide more space for bee travel.

**Uncapping knife** - a knife used to shave or re move the cappings from combs of sealed honey prior to extraction; usually heated by steam or electricity.

**Uniting** - combining two or more colonies to form a larger colony.

**Venom allergy** - a condition in which a person, when stung, may experience a variety of symptoms ranging from a mild rash or itchiness to anaphylactic shock. A person who is stung and experiences abnormal symptoms should consult a physician before working bees again.

**Venom hypersensitivity** - a condition in which a person, if stung, is likely to experience an aphylactic shock. A person with this condition should carry an emergency insect sting kit at all times during warm weather.

**Virgin queen** - an unmated queen.

**Wax glands** - the eight glands that secrete bees wax; located in pairs on the last four visible ventral abdominal segments.

**Wax moth** - larvae of the moth *Galleria melloncia*, which seriously damage brood and empty combs.

**Winter cluster** - the arrangement of adult bees within the hive during winter.

**Worker bee** - a female bee whose reproductive organs are undeveloped. Worker bees do all the work in the colony except for laying fertile eggs.

**Worker comb** - comb measuring about five cells to the inch, in which workers are reared and honey and pollen are stored.