

## Beekeeping Glossary

**Abdomen:** Segmented posterior part of bee containing heart, honey, stomach, intestines, reproductive organs, and sting.

**Acarapis woodi:** Scientific name of acarine mite, which infests tracheae of bees.

**Acarine disease:** Condition caused by *Acarapis woodi*.

**Acid board (also Fume board):** A rimmed hive cover containing a pad of absorbent material into which benzaldehyde or butyric anhydride (bee repellents) is poured. Used to remove bees from honey supers.

**AHB:** Africanized honeybee.

**Alighting board:** Extended entrance of beehive on which incoming bees land.

**Allele:** One of a pair or series of alternative genes that can occur at a given point on a chromosome.

**American foul brood (AFB):** Contagious disease of bee larvae caused by *Bacillus larvaceus*.

**AMM (*Apis Mellifera Mellifera*):** The European dark bee (*Apis mellifera mellifera*) was domesticated in modern times, and taken to North America in colonial times. These small, dark-colored honey bees are sometimes called the German black bee, although they occurred originally from Britain to eastern Central Europe.

**Antennae:** Slender jointed feelers, which bear certain sense organs, on head of insects.

**Anther:** Part of plant that develops and contains pollen.

**Apiarist:** Beekeeper.

**Apiary:** Group of bee colonies kept in one location (bee yard).

**Apiculture:** The science and art of studying and using honey bees for man's benefit.

**Apis:** The genus to which the honey bee belongs.

**Apis mellifera:** Scientific name of the Western honey bee.

**Apis cerana:** Scientific name of the Eastern honey bee, the honey producer of South Asia, also called *Apis indica*.

**Apis dorsata:** Scientific name for the large honey bee of Asia which builds open air nests of single comb suspended from tree branches, rocky ledges, etc.

**Apis florea:** Scientific name for the small honey bee of Asia.

**Artificial insemination:** See instrumental insemination.

**Autopollination:** The automatic transfer of pollen from anthers to stigma within a flower as it opens.

**Bacillus larvae:** Bacterial organism causing American foulbrood.

**Balling a queen:** Clustering around unacceptable queen by worker bees to form a tight ball; usually queen dies or is killed in this way.

**Bee bread:** Pollen stored in cells of the comb and used by bees for food.

**Bee dance:** Anthropomorphic term for one of several physical maneuvers conducted within a bee colony; it has very inaccurate correlations relative to a forager's flight experience in the field (distance and direction of the site visited), but odor on the dancer's body appears to be the means of communication that recruits use to find the same nectar or pollen source.

**Bee escape:** Device to let bees pass in only one direction; usually inserted between honey supers and brood chambers, for removal of bees from honey supers.

**Bee gum:** Usually hollow log hive.

**Beehive:** Domicile prepared for colony of honey bees.

**Bee louse:** Relatively harmless insect that gets on honey bees, but larvae can damage honeycomb; scientific name is *Braula coeca*.

**Bee lust:** An insatiable covetousness of more bees, hives, and/or beekeeping paraphernalia that leads one to amass more than they can possibly maintain or has the knowledge to manage.

**Bee metamorphosis:** The transformation of the bee from egg to larva to pupa and finally to the adult stage.

**Bee moth:** See wax moth.

**Bee paralysis:** An adult bee disease of chronic and acute type caused by different viruses.

**Bee space:** A space (1/4- to 5/16-inch) big enough to permit free passage for a bee but too small to encourage comb building. Leaving bee space between parallel beeswax combs and between the outer comb and the hive walls is the basic principle of hive construction.

**Beeswax:** Wax secreted from glands on the underside of bee abdomen; molded by bees to form honeycomb.

**Bee tree:** A hollow tree occupied by a colony of bees.

**Bee veil:** See veil.

**Bee venom:** Poison injected by bee sting.

**Bee yard:** (See Apiary).

**Bottom board:** Floor of beehive.

**Brace comb:** Section of comb built between and attached to other combs.

**Braula coeca:** See bee louse.

**Boardman feeder:** A small, wooden feeder placed at the hive entrance and holding an inverted pint or quart glass jar of sugar syrup. Not recommended.

**Brood:** Immature or developing stages of bees; includes eggs, larvae (unsealed brood), and pupae (sealed brood).

**Brood chamber:** The area of the hive where the brood is reared; usually the lowermost hive bodies.

**Brood comb:** Wax comb from brood chamber of hive containing brood.

**Brood nest:** Area of hive where bees are densely clustered and brood is reared.

**Burr comb:** Comb built out of place, between movable frames or between the hive bodies.

**BT:** *Bacillus thuringiensis*. Used for controlling wax moths. *Bacillus thuringiensis aizawai* strain NB200 is a part of a large group of bacteria, *Bacillus thuringiensis* (Bt), that occur naturally in soil. These bacteria are toxic to certain species of insects and can be used as an insecticides. Once ingested by larvae, Bt bacteria release a toxic protein into the insect digestive system. This protein causes death by attaching to the gut, eventually rupturing it. Different strains of Bt are toxic to specific groups of insects. *Bacillus thuringiensis aizawai* strain NB200 is known to be toxic to numerous species of moths, including many pests of agricultural crops.

**Capped brood:** Brood (either last larval stage or pupal stage) that has been capped over in its cell.

**Capped honey:** Cells full of honey, closed or capped with beeswax.

**Cappings:** Beeswax covering of cells of honey which are removed before extracting.

**Cappings spinner:** A centrifuge with wire-screened baskets used to separate honey from wax.

**Castes:** The three types of individual bees (workers, drones, and queen) that comprise the adult population of a bee colony.

**Carniolan bees:** A race of honey bees which originated in the southern part of the Austrian Alps and northern Yugoslavia.

**Caucasian bees:** A race of honey bees native to the high valleys of the Central Caucasus.

**Colony Collapse Disorder (CCD):** a phenomenon in which worker bees from a beehive or European honey bee colony abruptly disappear. While such disappearances have occurred throughout the history of apiculture, the term colony collapse disorder was first applied to a drastic rise in the number of disappearances of Western honey bee colonies in North America in late 2006. The cause or causes of the syndrome are not yet fully understood.

**Cell:** The six-sided compartment of a honeycomb, used to raise brood or to store honey and pollen. Worker cells approximate five to the linear inch, drone cells are larger averaging about four to the linear inch.

**Cell cup:** Initially constructed base of queen cell; also made artificially for queen rearing.

**Checkerboarding:** A management technique to prevent swarming, termed by Walt Wright. See:

<http://www.beesource.com/forums/showthread.php?194278>

**Chilled brood:** Brood that has died because of chilling. It can be a result of mistreatment of the bees by the beekeeper. It also can be caused by a pesticide hit that primarily kills off the adult population, or by a sudden drop in temperature during rapid spring buildup. The brood must be kept warm at all times; nurse bees will cluster over the brood to keep it at the right temperature. When a beekeeper opens the hive (to inspect, remove honey, check the queen, or just to look) and prevents the nurse bees from clustering on the frame for too long, the brood can become chilled, deforming or even killing some of the bees.

**Chromosomes:** The structures in a cell that carry the genes.

**Chunk honey:** A jar of honey containing both liquid (extracted) honey and a piece of comb with honey.

**Cleansing flight:** Flight bees take after days of confinement, during which they void their feces.

**Clipped queen:** Queen whose wing (or wings) has been clipped for identification purposes.

**Cluster:** Loosely, any group of bees that forms a relatively compact aggregation. A winter cluster is composed of all the bees in the colony huddled as closely together as necessary to maintain the required temperature. As the ambient temperature increases, the cluster expands until it loses its identity but it will reappear if the temperature drops.

**Colony:** Social community of several thousand worker bees, usually containing one queen, with or without drones. (See social insects.)

**Comb:** (See honeycomb).

**Comb foundation:** Thin sheet of beeswax impressed by mill to form bases of cells; some foundation also is made of plastic and metal.

**Comb honey:** Honey marketed and eaten in the comb.

**Corbicula:** See pollen basket.

**Creamed honey:** Honey made to crystallize smoothly by seeding with 10 percent crystallized honey and storing at about 57°F.

**Cross pollination:** Transfer of pollen between plants which are not of identical genetic material.

**Crystallized honey:** Honey hardened by formation of dextrose-hydrate crystals. Can be reliquefied by gentle heat.

**Cut comb honey:** Comb honey cut into appropriate sizes and packed in plastic.

**Dearth:** Severe to total lack of availability, usually in reference to nectar and/or pollen.

**Demaree:** Method of swarm control, by which queen is separated from most of brood; devised by man of that name.

**Dextrose:** Also known as glucose; one of principal sugars of honey.

**Diastase:** Enzyme that aids in converting starch to sugar.

**Diploid:** An organism or cell with two sets of chromosomes, for example, worker and queen honey bees.

**Disappearing disease:** A condition in which colonies become weak from causes which are not readily identifiable.

**Division board:** Flat board used to separate two colonies or colony into two parts.

**Division board feeder:** A wooden or plastic trough which is placed in the hive in a frame space to feed the colony honey or sugar syrup.

**Drawn comb:** Comb having the cells built out (drawn) by honey bees from a sheet of foundation. Cells are about 1/2-inch deep.

**Drift:** Movement of bees from their original hive into a neighboring hive frequent with drones and surprisingly common with workers.

**Drone comb:** Comb with about four cells to the inch and in which drones are reared.

**Drone congregation area (DCA):** an area where many drones from surrounding colonies gather to mate with queens during their nuptial flights.

**Drone layer:** A queen which lays only unfertilized eggs which always develop into drones. Results from improperly or non-mated queen or an older queen who has run out of sperm.

**Dwindling:** Rapid or unusual depletion of hive population, usually in the spring.

**Dysentery:** The discharge of fecal matter by adult bees within the hive. Commonly contributing conditions are nosema disease, excess moisture in the hive, starvation conditions, and low quality food. Tan, brown, or black fecal smears on combs or outside of hive indicate such a problem.

**Escape board:** Board with one or more bee escapes on it to permit bees to pass one way. Used to empty one or more supers of bees.

**European foulbrood (EFB):** Brood disease of bees caused by *Streptococcus pluton* and possibly associated organisms.

**Extracted honey:** Honey removed from the comb by centrifugal motion (in a special machine called an extractor) and marketed in the liquid form.

**Extractor:** Machine that rotates honeycombs at sufficient speed to remove honey from them.

**Fanning:** Worker bees fan the hive by directing airflow into the hive or out of the hive depending on need, sometimes cooling it with evaporated water brought by water carrier bees.

**Festoon:** A unique cluster of bees that link themselves together by their tarsi (feet) in a loose network between combs in a hive. Normally, these are aggregates of wax-producing bees.

**FGMO:** Food Grade Mineral Oil. Has been used as an alternative treatment for honey bee mites.

**Field bees:** Those bees in the hive who are mature enough to fly from the hive on foraging missions; also termed forager bees.

**Follower Board:** A board anywhere from 3/4" to 1/4" thick, plywood or other material, cut to the size of your frames (deep, med or shallow). A simple divider that acts like a movable hive side, allowing you to create any interior size needed.



**Food chamber:** Hive body containing honey provided particularly for overwintering bees.

**Foundation:** (See Comb foundation).

**Frame:** Rectangular, wooden honeycomb supports, suspended by top bars within hive bodies.

**Fructose:** (See Levulose).

**Full sisters:** Queen or worker bees produced by a single queen and sired by different drones that are related to each other as brothers (used in bee breeding).

**Fumagillin:** Antibiotic given bees to control nosema disease.

**Fume board:** See Acid board.

**Galleria mellonella:** Scientific name of greater wax moth, whose larvae destroy honeycomb.

**Gamete:** A male or a female reproductive cell (egg or sperm).

**Gene:** A unit of inheritance located at a specific location in a chromosome.

**Gene pool:** The genetic base available to bee breeders for stock improvement.

**Germplasm:** All the hereditary material that can potentially contribute to the production of new individuals.

**Giant bee:** (See *Apis dorsata*).

**Glucose:** (See Dextrose).

**Grafting:** The transfer of young larvae from worker cells to queen cups.

**Granulated honey:** (See crystallized honey).

**Half sisters:** Queen or worker bees produced by a single queen and sired by drones that are not related to each other.

**Haploid:** An organism or cell with one set of chromosomes; for example, drone bee.

**HBH:** Honey-Bee-Healthy, an essential oil additive to honey bee feed to control varroa mites, tracheal mites and to reverse

the parasitic mite syndrome (PMS) seen in colonies infested with varroa mites.

**Hemizygous:** The condition in which only one allele of a pair is present. Drones are hemizygous at all loci.

**Heterosis:** Hybrid vigor.

**Heterozygous:** An organism with unlike members of any given pair or series of alleles (bee genetics).

**HFCS:** High Fructose Corn Syrup

**Hive:** Man-constructed home for bees.

**Hive stand:** A device that elevates the bottom board up off the ground.

**Hive tool:** Metal tool for prying supers or frames apart.

**HMF (Hydroxymethylfurfural):** an organic compound derived from dehydration of sugars.

**Hoffman frame:** Self-spacing wooden frame of type customarily used in Langstroth hives.

**Homozygous:** An organism with identical members of any given pair or series of alleles.

**Honey:** Sweet, viscous fluid elaborated by bees from nectar obtained from plant nectaries, chiefly floral.

**Honey bee:** Genus *Apis*, family *Apidae*, order *Hymenoptera*.

**Honey bound:** When the brood nest is bounded or restricted by cells/comb filled with honey.

**Honeycomb:** Comb built by honey bees with hexagonal back-to-back cells on median midrib.

**Honeydew:** Sweet secretion from aphids and scale insects.

**Honey extractor:** (See Extractor).

**Honey flow:** Period when bees are collecting nectar from plants in plentiful amounts.

**Honey house:** Building in which honey is extracted and handled.

**Honey pump:** Pump for transferring liquid honey, usually from the extractor to storage tanks.

**Honey stomach:** (Honey sac) An enlargement of the posterior end of the oesophagus in the bee abdomen. It is the sac in which the bee carries nectar from flower to hive.

**Honey sump:** Temporary honey-holding area with baffles usually placed between the extractor and the honey pump; tends to hold back sizable pieces of wax and comb.

**Hot room:** An insulated portion of a warehouse with radiant or forced air heating that can produce temperatures up to 100°F.

**Hybrid:** Offspring from two unrelated (usually inbred) lines.

**Hymenoptera:** Order to which all bees belong, as well as ants, wasps, and certain parasitic insects.

**II:** (See Instrumental Insemination)

**Inbred:** A homozygous organism usually produced by inbreeding.

**Inbreeding:** Matings among related individuals.

**Inner cover:** A cover used under the standard telescoping cover on a bee hive.

**Instrumental insemination:** The act of depositing semen into the oviducts of a queen by the use of a man-made instrument.

**Integrated Pest Management (IPM):** is a pest control strategy that uses a variety of complementary strategies including: mechanical devices, physical devices, genetic, biological, cultural management, and chemical management. These methods are done in three stages: prevention, observation, and intervention. It is an ecological approach with a main goal of significantly reducing or eliminating the use of pesticides while at the same time managing pest populations at an acceptable level.

**Introducing cage:** Small wood and wire cage used to ship queens and also sometimes to release them into the colony.

**Invertase:** Enzyme produced by bees that speeds inversion of sucrose to glucose and fructose.

**Inverted or invert sugar syrup:** is a mixture of glucose and fructose. It is obtained by splitting sucrose into its two components. Compared with its precursor sucrose, inverted sugar is sweeter and its products tend to stay moist and are less prone to crystallization. Inverted sugar is therefore valued by bakers, who refer to the syrup as ‘trimoline’ or ‘invert syrup’.

**IPM:** (See Integrated Pest Management)

**Italian bees:** A race or variety of honey bee which originated in Italy and has become widely dispersed and cross-bred with other races.

**Jumbo hive:** Hive 2-1/2 inches deeper than standard Langstroth hive.

**Langstroth:** A minister from Pennsylvania who patented the first hive incorporating bee space thus providing for removable frames. The modern hive frequently is termed the Langstroth hive and is a simplified version of similar dimensions as patented by Langstroth.

**Langstroth frame:** 9-1/8- by 17-5/8-inch standard U.S. frame.

**Larva:** Stage in life of bee between egg and pupa; “grub” stage.

**Laying worker:** Worker bees which lay non-fertilized eggs producing only drones. They occur in hopelessly queenless colonies. Laying workers will lay multiple eggs per cell, have a spotty brood pattern, eggs laid on the sides of the cell or off center, and drone brood in worker sized cells.

**Levulose:** Noncrystallizing sugar of honey which darkens readily if honey is overheated.

**Line breeding:** Mating of selected members of successive generations among themselves in an effort to maintain or fix desirable characteristics.

**Locus:** A fixed position on a chromosome occupied by a given gene or one of its alleles.

**Mandibles:** Jaws of insects.

**Mating flight:** The flight of a virgin queen during which time she mates with one or more drones high in the air away from the apiary. Queens usually mate with 6 to 10 drones on two or more mating flights.

**Mead:** A wine made with honey. If spices or herbs are added, the wine usually is termed metheglin.

**Metamorphosis:** Changes of insect from egg to adult.

**Migratory beekeeping:** Movement of apiaries from one area to another to take advantage of honey flows from different crops.

**Mite:** See *Acarapis woodi* and *Varroa jacobsoni*.

**Mutation:** A term used to describe both a sudden change in the alleles or chromosomes of an organism and the changed form itself as it persists.

**Nectar:** A sweet secretion of flowers of various plants, some of which secrete enough to provide excess for the bees to store as honey.

**Nectaries:** Special cells on plants from which nectar exudes.

**Nosema disease:** Disease of bees caused by protozoan spore-forming parasite, *Nosema apis*.

**Nucleus (Nuke, Nuc):** A small colony of bees resulting from a colony division. Also, a queen-mating hive used by queen breeders.

**Nurse bees:** Three-to 10-day-old adult bees that feed the larvae and perform other tasks in the hive.

**Observation hive:** Hive with glass sides so bees can be observed.

**Ocellus (ocelli):** Simple eye(s) of bees.

**Orientation flights:** Short orienting flights taken by young bees, usually by large numbers at one time and during warm part of day.

**Package bees:** A quantity of bees (2 to 5 lb) with or without a queen shipped in a wire and wood cage to start or boost colonies.

**Paralysis:** (See bee paralysis).

**Parthenogenesis:** Production of offspring from a virgin female.

**Pheromones:** Chemicals secreted by animals to convey information or to affect behavior of other animals of the same species. (See queen substance.)

**Pistil:** The combined stigma, style, and ovary of a flower.

**PMS (Parasitic Mite Syndrome):** For years we have been seeing diseased bee larvae with symptoms resembling a cross between foulbrood and sacbrood. The USDA Beltsville Bee Lab has found these diseased larvae to be infected with one, or commonly several, viruses. This new disease seems to be limited to colonies infested with Varroa mites. Additionally, beekeepers have experienced bees disappearing completely from previously healthy colonies in the early fall. This situation is most likely associated with Varroa mites, viruses or a combination of both.

**Pollen:** Male reproductive cells of flowers collected and used by bees as food for rearing their young. It is the protein part of the diet. Frequently called bee bread when stored in cells in the colony.

**Pollen basket:** Area on hind leg of bee adapted for carrying pellets of pollen.

**Pollen cake:** Cake of sugar, water, and pollen or pollen substitute, for bee feed.

**Pollen substitute:** Mixture of water, sugar, and other material, such as soy flour, brewer's yeast, etc., used for bee feed.

**Pollen supplement:** Pollen substitute added to natural pollen in a pollen cake.

**Pollen trap:** Device which forces bees entering hive to walk through a 5-mesh screen, removing pollen pellets from their legs into a collecting tray.

**Pollination:** The transfer of pollen from the anthers of a flower to the stigma of that or another flower.

**Pollinator:** The agent which transfers pollen; e.g., a bee.

**Pollinizer:** The plant source of pollen used for pollination; e.g., pollinizer varieties of apples and pears must be planted in order to produce a crop. Bees must carry the pollen from one variety to another.

**Proboscis:** Mouth parts of bee for sucking up nectar, honey, or water.

**Propolis:** A glue or resin collected from trees or other plants by bees; used to close holes and cover surfaces in the hive. Also called bee glue.

**Pupa:** Stage in life of developing bee after larva and before maturity.

**Queen:** Sexually developed female bee. The mother of all bees in the colony.

**Queen cage candy:** A special fondant made from Nulomoline, drivert, and glycerine; used to feed queen and attendant bees in queen cages.

**Queen cell:** Cell in which queen develops.

**Queen cup:** The beginnings of a queen cell in which the queen may lay a fertile egg to start the rearing of another queen.

**Queen excluder:** Device usually made of wood and wire, with opening 0.163 inch, to permit worker bees to pass through but excludes queens and drones. Used to restrict the queen to certain parts of the hive.

**Queenright:** A colony of bees with a properly functioning queen.

**Queen substance:** Pheromone material secreted from glands in the queen bee and transmitted throughout the colony by workers. It makes the workers aware of the presence of a queen.

**Race:** Populations of bees, originally geographically isolated and somewhat adapted to specific regional conditions.

**Ripening:** Process whereby bees evaporate moisture from nectar and convert its sucrose to dextrose (glucose) and levulose (fructose), thus changing nectar into honey.

**Rendering wax:** Melting old combs and wax cappings and removing refuse to partially refine the beeswax. May be put through a wax press as part of the process.

**Requeen:** To replace a queen in a hive. Usually to replace an old queen with a young one.

**Robbing:** Bees steal honey from other hives. A common problem when nectar is not available in the field.

**Ropiness:** Having the characteristic of sticky elasticity and stringing out when stirred and stretched.

**Royal jelly:** Glandular secretion of young worker bees used to feed the queen and young brood.

**Sac brood:** A fairly common virus disease of larvae, usually nonfatal to the colony.

**Scale:** A dehydrated, dead larva shrunken to an elongated thin, flat chip at the bottom of a cell.

**Scout bees:** Worker bees searching for nectar or other needs including suitable location for a swarm to nest.



**Screened Bottom Board (SBB):**

**Sealed brood:** Brood in pupal stage with cells sealed.

**Self-pollination:** The transfer of pollen from the anther to the stigma of the same flower or to flowers of the same plant or other plants of identical genetic material such as apple varieties, clones of wild blueberries, etc. (See autopolination).

**Septicemia:** Usually minor disease of adult bees caused by *Pseudomonas apiseptica*.

**SHB:** Small Hive Beetle (*Aethina tumida*). The small hive beetle can be a destructive pest of honey bee colonies, causing damage to comb, stored honey and pollen. If a beetle infestation is sufficiently heavy, they may cause bees to abandon their hive. The beetles can also be a pest of stored combs, and honey (in the comb) awaiting extraction. Beetle larvae may tunnel through combs of honey, feeding and defecating, causing discoloration and fermentation of the honey.

**Skep:** A beehive, usually of straw and dome-shaped, that lacks movable frames.

**Slatted Bottom Rack:** A ventilation board that fits between the bottom hive body and the bottom board (Langstroth Hive). It provides cluster space for bees, allows air circulation without allowing a direct draft on the brood, and helps prevent swarming.

**Slungum:** A dark residue, consisting of brood cocoons and pollen, which is left after wax is rendered by the beekeeper.

**Smoker:** Device used to blow smoke on bees to reduce stinging.

**SMR (Suppress Mite Reproduction):** Scientists at the Honey Bee Breeding Genetic & Physiology Laboratory (USDA, Agricultural Research Service) in Baton Rouge, Louisiana, have selected bees that are resistant to this [varroa] mite. The mechanism of resistance is a trait of the honey bee that

suppresses mite reproduction (SMR). This trait prevents female mites from producing progeny. Because SMR is a trait rather than a stock, SMR genes can be added to any population of honey bees by using traditional breeding methods.

**Social insects:** Insects which live in a family society, with parents and offspring sharing a common dwelling place and exhibiting some degree of mutual cooperation; e.g., honey bees, ants, termites.

**Solar wax melter:** Glass-covered box in which wax combs are melted by sun's rays and wax is recovered in cake form.

**Spermatheca:** Small saclike organ in queen in which sperms are stored.

**Spermatozoa:** Male reproductive cells.

**Spiracles:** External openings of tracheae through which bees breathe.

**Spring dwindling:** A condition in which the colony population decreases in size during spring at which time exponential population growth is anticipated.

**Stamen:** Male part of flower on which pollen-producing anthers are borne.

**Sting:** Modified ovipositor of female Hymenoptera developed into organ of defense.

**Sucrose:** Cane sugar; main solid ingredient of nectar before inversion into other sugars.

**Super:** A wooden box with frames containing foundation or drawn comb in which honey is to be produced. Named for its position above the brood nest. The same type of box is referred to as a hive body when it is situated below the honey supers and is intended to be used for brood rearing and pollen storage.

**Supersedure:** The replacement of a weak or old queen in a colony by a daughter queen – a natural occurrence.

**Supersisters:** Queens or worker bees produced by a single queen and sired by identical sperm from a single drone (subfamily).

**Surplus honey:** A term generally used to indicate an excess amount of honey above that amount needed by the bees to survive the winter. This surplus is usually removed by the beekeeper.

**Swarm:** Natural division of colony of bees.

**Tarsus:** Fifth segment of bee leg.

**Thorax:** Middle part of bee.

**Tracheae:** Breathing tubes of insects.

**Tracheal mite:** (See *Acarapis woodi*)

**Trophallaxis:** the mutual exchange of regurgitated liquids between adult social insects or between them and their larvae.

**Tumuli:** Nest mounds (wild bees).

**Uncapping knife:** Knife used to remove honey cell caps so honey can be extracted.

**Unite:** Combine one colony with another.

**Unsealed brood:** Brood in egg and larval stages only.

**Varroa destructor:** An external parasitic mite that attacks honey bees *Apis cerana* and *Apis mellifera*.

**Veil:** Fine mesh material that fastens to a hat and is secured to the upper torso of a beekeeper, protecting the head and neck area from bees.

**Virgin queen:** Unmated queen.

**VSH (Varroa Sensitive Hygiene):** USDA ARS scientists Dr. John Harbo and Dr. Jeffrey Harris at the Honey Bee Breeding Laboratory in Baton Rouge, Louisiana, have defined and tested a trait of the honeybee which appeared to suppress mite reproduction (SMR). Recently it has been better defined as “varroa sensitive hygiene (VSH).” This is a form of behavior

where adult bees remove pupae that have reproductive mites but do not disturb pupae that have mites that produce no progeny.

**Walk-away split:** Frames with eggs and worker bees are removed from a queenright hive and installed into an empty brood chamber or nuc. The bees should create a queen cell out of a suitable egg. Once the queen hatches, successfully mates and returns to the hive, the hive will be queenright. Another option is to remove one complete brood chamber from a hive that has newly laid eggs in it, including bees, and move to a new location for the start of a new hive.

**Washboarding:** Worker honey bees exhibit a “group” activity known as rocking or washboarding on the internal and external surfaces of the hive. This behavior is believed to be associated with general cleaning activities but virtually nothing is known as to the age of worker engaged in the behavior, under what circumstances workers washboard and the function of the behavior. Washboarding behavior appears to be age dependent with bees most likely to washboard between 15-25 days of age. Washboarding increases during the day and peaks through the afternoon. Workers may respond to rough texture and washboard more on those surfaces. The function of this behavior remains to be elucidated.

**Wax glands:** Glands on underside of bee abdomen from which wax is secreted after bee has been gorged with food.

**Wax moth:** Lepidopterous insect whose larvae destroy wax combs.

**Wild bees:** Any insects that provision their nests with pollen, but do not store surplus’ edible honey.

**Winter cluster:** Closely packed colony of bees in winter.

**Wired foundation:** Foundation with strengthening wires embedded in it.

**Wired frames:** Frames with wires holding sheets of foundation in place.

**Worker bee:** Sexually undeveloped female bee.

**Worker comb:** Honeycomb with about 25 cells per square inch.

**Worker egg:** Fertilized bee egg.