

## Glossary of Beekeeping Terms

*Note: many of these terms are Latin and the plural of the ones with an 'a' ending will be 'ae'. The plural of the 'us' endings will be 'i'. Also meanings are given in the context of beekeeping.*

### A

**Abandonment** = A method of getting the bees out of the supers. (Not to be confused with “absconding”.) This is where you pull each box off the hive and set it on its end so the top and bottom are exposed. This is best done at the end of the flow but not during a dearth and just after sunset but before dark. The bees tend to wander back to the hive and you can take the supers. If there is brood in them, they will not leave. If there is a dearth you will set off a robbing frenzy. If you do it in the middle of the afternoon this will be harder to deal with. This requires handling the boxes twice. Once to take them off and once to load them up. (I'm not counting the rest of the process)

**Abdomen** = The posterior or third region of the body of the bee that encloses the honey stomach, stomach, intestines, fat body, sting and the reproductive organs.

**Abscond** = When the entire colony of bees abandons the hive because of pests, disease or other adverse conditions.

**Acaracide** = A product intended to kill mites. Usually used to refer to conventional chemical pesticides such as Amitraz, Fluvalinate, Coumaphos, but also applies to acids (formic, oxalic, etc.), essential oils (thymol, menthol, eucalyptus, etc.) and other biological mite killing agents.

***Acarapis dorsalis*** = Mite that lives on honey bee dorsal thoracic segments that is indistinguishable from tracheal mites (*Acarapis woodi*). It is classified differently based on subtle morphological differences, and the location where it is found, on the back.

***Acarapis externus*** = Mite that lives on honey bees that is indistinguishable from Tracheal mites (*Acarapis woodi*). It is classified differently based on subtle morphological differences, and the location where it is found, on the neck.

***Acarapis vagans*** = Mite that lives on honey bees that is indistinguishable from Tracheal mites (*Acarapis woodi*). It is classified differently simply based on subtle morphological differences, and the location where it is found, usually on the wings.

***Acarapis woodi*** = Tracheal Mite, which infests the bees' tracheae; sometimes called Acarine Disease or Isle of Wight disease.

**Accelerated queen rearing** = A system of mating nucs where there are usually two queens in the mating nuc a week apart, one in a nursery cage and one loose and mating. Every week the one that is now mated is removed, the one in the cage is released, and the new cell is put in with a hair curler cage on it.

**Acute Paralysis Virus aka APV** = A viral disease of adult bees which affects their ability to use legs or wings normally. It can kill adults and brood. Vectored by varroa mites.

**Africanized Honey Bees** = A hybrid of the African bee, *Apis mellifera scutellata*, and *A. mellifera mellifera*, or other western subspecies. Africanized bees are typically much more defensive than other species of bee, and react to disturbances faster than European honey bees. They can chase a person a quarter of a mile (400 m); they have killed some 1,000 humans, with victims receiving ten times more stings than from European honey bees. (Wikipedia)

**Afterswarm** = A swarm after the primary swarm. These are headed by a virgin queen.

**Alarm pheromone** = A blend of organic chemicals which elicit a strong defensive behavioral response. One of the most significant chemicals is iso-pentyl acetate, a substance which smells similar to artificial banana flavoring, released near the worker bee's sting, which alerts the hive to an attack.

**Alcohol wash** = Putting a cupful of bees in a jar with alcohol to kill the bees and mites so you can count the Varroa mites. A sugar roll is an alternative non-lethal method of doing the same.

**Allergic reaction** = A potentially life threatening systemic reaction to bee venom or other chemical, characterized by a rash, hives, breathing difficulty, or loss of consciousness. This should be distinguished from a normal local, or large local reaction to bee venom, which is itching and burning in the general vicinity of the sting.

**Alley Method** = A graft-less method of queen rearing system where bees are put in a "swarm box" to convince them they have no queen, and a strip of old brood comb is cut and put on a bar for the bees to build into queen cells.

**American Foulbrood** = A serious disease, caused by the spore-forming [\*Paenibacillus larvae\* ssp. larvae](#). Chemical treatment is sometimes used prophylactically, but this is a source of considerable controversy because certain strains of the bacterium seem to be rapidly developing resistance.<sup>[14]</sup> In addition, hives that are contaminated with millions of American foulbrood spores have to be prophylactically treated indefinitely. Once the treatment is suspended the American foulbrood spores germinate successfully again leading to a disease outbreak. Because of the persistence of the spores (which can survive up to 40 years), many State Apiary Inspectors require an AFB diseased hive to be burned completely. A less radical method of containing the spread of disease is burning the frames and comb and thoroughly flame scorching the interior of the hive body, bottom board and covers. Dipping the hive parts in hot [paraffin wax](#) or a 3% [sodium hypochlorite](#) solution (bleach) also renders the AFB spores innocuous.<sup>[15]</sup> It is also possible to sterilize an infected hive without damaging either the structure of the hive or the stores of honey and pollen it contains by sufficiently lengthy exposure to an atmosphere of [ethylene oxide](#) gas, as in a closed chamber, as hospitals do to sterilize equipment that cannot withstand steam sterilization. (Wikipedia)

**Anaphylactic shock** = Constriction of the smooth muscle including the bronchial tubes and blood vessels of a human, caused by hypersensitivity to venom and resulting in sudden

death unless immediate medical attention is received. Rapid administration of epinephrine via an “EpiPen<sup>®</sup>” is a common first aid treatment.

**Antennae** = (singular: **antenna**), sometimes referred to as "feelers," are paired appendages used for sensing in arthropods. **Antennae** are connected to the first one or two segments of the arthropod head. They vary widely in form, but are always made of one or more jointed segments. (Wikipedia)

**Attendants** = Worker bees that care for the queen. When used in the context of queens in cages, the workers that are added to the cage to take care of the queen.

**Apiary** = A bee yard.

**Apiarist** = A beekeeper.

**Apiculture** = The science and art of raising honey bees.

***Apis mellifera mellifera*** = The European dark bee (*Apis mellifera mellifera*) is a subspecies of European honey bee (*Apis mellifera*) whose original European range stretched from western Russia through Northern Europe and probably down to the Iberian Peninsula. (Wikipedia)

***Apis mellifera*** = The western honey bee, *Apis mellifera* Linnaeus, naturally occurs in Europe, the Middle East, and Africa. This species has been subdivided into at least 20 recognized subspecies (or races), none of which are native to the Americas. It is believed that the honey bee originated in **Africa** and spread to northern **Europe**, India, and China.

## **B**

***Bacillus larvae*** = The outdated name for *Paenibacillus larvae*, the bacteria that causes American Foulbrood.

***Bacillus thuringiensis*** = A naturally occurring bacteria that is sprayed on empty comb to kill wax moths. Also sold to control larvae of other specific insects.

**Backfilling** = A term coined by Walt Wright to describe the process of the bees creating a honey bound brood nest. The process where the bees put honey in the brood nest to prevent the queen from laying and to prepare for swarming.

**Baggie feeder** = Fill a zip lock baggie with sugar syrup, lay on the top frames of the hive, and cut several small slits in the top.

**Bait Hive** aka Decoy hive aka Swarm trap = A hive placed to attract stray swarms. Optimum bait hive: At least 20 liters of volume. 9-15 feet off the ground. Small entrance. Old comb. Lemongrass oil. Queen substance.

**Balling** = Worker bees surrounding a queen either to confine her because they reject her or to confine her to protect her.

**Banking queens** = Putting multiple caged queens in a nuc or hive.

**Bearding** = When bees congregate on the front of the hive.

**Bee blower** = A gas or electrically driven blower used to blow bees from supers when harvesting.

**Bee bread** = Fermented pollen stored in the hive and used to feed brood and the queen.

**Bee brush** = Soft brush or whisk or large feather or handful of grass used to remove bees from combs.

**Bee escape** = A device constructed to permit bees to pass one way, but prevent their return; used to clear bees from supers or other uses. The most common one seems to be the Porter escape which is made to go in the hole in the inner cover. The most effective one seems to be the triangular one which is its own board.

**Bee Go**<sup>®</sup> = Butyric anhydride which is used to drive bees from supers. Smells a lot like vomit.

**Bee Gum** = A piece of a hollow tree used for a hive.

**Bee haver** = A term coined by George Imirie. One who has bees but has not learned enough technique to be a beekeeper.

**Bee jacket** = A white jacket, usually with a zip on veil and elastic at the sleeves and waist, worn as protection when working bees.

**Bee Parasitic Mite Syndrome** aka Parasitic Mite Syndrome = A set of symptoms that are caused by a major infestation of Varroa mites. Symptoms include the presence of Varroa mites, the presence of various brood diseases with symptoms similar to that of foulbroods and sacbrood but with no predominant pathogen, AFB-like symptoms, spotty brood pattern, increased supersedure of queens, bees crawling on the ground, and a low adult bee population.

**Bee Quick®** = A proprietary mix of oils and herbal extracts, that smells like benzaldehyde; used to drive bees from supers.

**Bee space** = A space between 1/4 and 3/8 inch (6mm and 10mm) which permits free passage for a bee but too small to encourage comb building, and too large to induce propolizing.

**Bee suit** = A pair of white coveralls made for beekeepers to protect them from stings and keep their clothes clean. Most come with zip-on veils.

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

**Bee vac** aka Bee vacuum = A vacuum used to suck up bees when doing a cutout or removal. Usually converted from a shop vac. It needs careful adjustment to not kill the bees.

**Bee veil** = 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 which is injected into the victim of a sting.

**Beehive** = Any structure, natural or man-made, that houses a colony of bees.

**Beelining** = Finding feral bees by establishing the line which the bees fly back to their home. This can also include marking and timing the bees to get the distance and triangulating the location by releasing the bees from various places.

**Beek** = Beekeeper

**Beekeeper** = One who keeps bees. An Apiarist.

**Beeswax** = A substance that is secreted by bees by special glands on the underside of the abdomen, deposited as thin scales, and used after mastication and mixture with the secretion of the salivary glands for constructing the honeycomb. An approximate chemical formula for **beeswax** is  $C_{15}H_{31}COOC_{30}H_{61}$ . Its main components are palmitate, palmitoleate, and oleate esters of long-chain (30–32 carbons) aliphatic alcohols, with the ratio of triacontanyl palmitate  $CH_3(CH_2)_{29}O-CO-(CH_2)_{14}CH_3$  to cerotic acid  $CH_3(CH_2)_{24}COOH$ , the two principal components, being 6:1. Beeswax melts at approximately 145°F (63°C). The flashpoint is 400°F (204.4°C)

**Better Queens method** = A graftless queen rearing method similar to Isaac Hopkins' actual queen rearing method (as opposed to the "Hopkins Method"). Sort of the Alley Method but with new comb instead of old.

**Betterbee** = A beekeeping supply company out of New York. They have many things no one else does. They also have eight frame equipment.

**Benzaldehyde** = A colorless nontoxic liquid aldehyde  $C_6H_5CHO$  that has an odor like that of bitter almond oil, that occurs in many essential oils and is sometimes used to drive bees out of honey supers. Also the flavor added to Maraschino cherries. What Bee Quick smells like.

**Black scale** = Refers to dried pupa, which died of a American Foulbrood.

**Boardman feeder**

**Bottling tank** = A food grade tank holding 5 or more gallons of honey and equipped with a honey gate to fill honey jars.

**Bottom bar** = The horizontal piece of the frame that is on the bottom of the frame.

**Bottom board** = The floor of a bee hive.

**Bottom board feeder** = A feeder that fits snugly into the entrance of the colony. A holder fits an inverted standard 1 qt perforated lid Mason jar filled with sugar syrup. Works best in warm weather (late spring, summer, early fall).

**Bottom supering** = The act of placing empty honey supers directly on top of the brood box, under all other existing honey supers. The theory is the bees will work it better when it's directly above the brood chamber; as opposed to TOP supering which would be just putting the new supers on top of the existing full supers.

**Box Jig** = Jig for nailing boxes.

**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.

***Braula coeca*** = An unusual wingless fly which parasitizes bees. Commonly known as the bee louse.

**Breeder hive** = The hive from which eggs or larvae are taken for queen rearing. In other words the donor hive.

**Bricks** = Used to keep the lids from blowing off in the wind and often used in particular configurations as visual clues as to the state of a hive.

**Brood** = Immature bees not yet emerged from their cells; in other words, egg, larvae or 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. Sometimes used to refer to a deep box as these are commonly used for brood.

**Brood nest** = The part of the hive interior in which brood is reared; usually the two bottom boxes.

**Brushy Mountain** = A beekeeping supply company out of North Carolina. A big proponent of all mediums and eight frame boxes. They have many items no one else has.

**Buckfast** = A strain of bees developed by Brother Adam at Buckfast Abbey in England, bred for disease resistance, disinclination to swarm, hardiness, comb building and good temper.

**Bt** = *Bacillus thuringiensis*. A naturally occurring bacteria that is sprayed on empty comb to kill wax moths. Also sold to control larvae of other specific insects.

**Burr comb** = Small pieces of comb outside of the normal space in the frame where comb usually is. Brace comb would fall into this category.

## C

**Candy plug** = A fondant type candy placed in one end of a queen cage to delay her release.

**Capped brood** = Immature bees whose cells have been sealed over with a brown wax cover by other worker bees.

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

**Cappings** = The thin wax covering over honey; once cut off of extracting frames.

**Capping scratcher** = A fork-like device used to remove wax cappings covering honey, so it can be extracted. Usually used on low areas that get missed by the uncapping knife.

**Carniolan bees** = *Apis mellifera carnica*; the subspecies of the Western honey bee that has naturalized and adapted to the Kočevje (Gottschee) sub-region of **Carniola** (Slovenia), the southern part of the Austrian Alps, Dinarides region, southern Pannonian plain and the northern Balkans. It is favored among beekeepers for several reasons, not the least being its ability to defend itself successfully against insect pests while at the same time being extremely gentle in its behavior toward beekeepers. These bees are particularly adept at adjusting worker population to nectar availability. It relies on these rapid adjustments of population levels to rapidly expand worker bee populations after nectar becomes available in the spring, and, again, to rapidly cut off brood production when nectar ceases to be available in quantity. It meets periods of high nectar with high worker populations and consequently stores large quantities of [honey](#) and [pollen](#) during those periods. They are resistant to some diseases and parasites that can debilitate hives of other subspecies. (Wikipedia)

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

**Carts** = Used for wheeling boxes or hives around.

**Caucasian bees** = *Apis mellifera caucasia*; the Caucasian honey bee originates from the high valleys of the Central [Caucasus](#). [Georgia](#) is the “central homeland” for the subspecies, although the bees also can be found in eastern Turkey, Armenia and Azerbaijan.

**Cell** = The hexagonal compartment of a honey comb.

**Cell bar** = A wooden strip on which queen cups are suspended for rearing queen bees.

**Cell cup** = Base of an artificial queen cell, made of beeswax or plastic and used for rearing queen bees or an empty beginning of a queen cell that the bees often build for no reason.

**Cell finisher** = A hive used to finish queen cells. Sometimes queenright, sometimes queenless.

**Cell starter** = A hive used to start queen cells. Sometimes a "swarm box" or sometimes just a queenless hive.

**Chalkbrood** = [\*Ascosphaera apis\*](#) is a fungal disease that infests the gut of the bee larva. The fungus competes with the larva for food, ultimately causing it to starve. The fungus then goes on to consume the rest of the larva's body, causing it to appear white and 'chalky'. Chalkbrood (*Ascosphaerosis larvae apium*) is most commonly visible during wet springs. Hives with chalkbrood can generally be recovered by increasing the ventilation through the hive.

**Checkerboarding** (aka Nectar Management)

**Chest hive** = a hive that is laid out horizontally instead of vertically.

**Chilled brood** = Immature bees that have died from exposure to cold; commonly caused by mismanagement or sudden cold spells.

**Chimney** = When the bees fill only the center frames of honey supers.

**Chinese grafting tool** = Grafting tool made of plastic, horn and bamboo that has a retractable "tongue" that slides under the larvae and, when release, pushes it off of the "tongue". Popular because it is easier to operate than most grafting needles and it lifts up more royal jelly in the process. Quality varies and most recommend buying several and picking the ones you like out of those.

**Chitin** = Material which the exoskeleton of an insect is made of.

**Chronic Paralysis Virus** aka CPV = Symptoms: bees trembling, unable to fly, with K-wings and distended abdomens. One variety called the hairless black syndrome, is recognized by hairless, black shiny bees crawling at the hive entrance.

**Chunk honey** = Honey in the comb, but not in sections, frequently cut and packed into jars then filled with liquid honey.

**Clarifying** = Removing visible foreign material from honey or wax to increase its purity.

**Clipping** = The practice of taking part of one or both wings off of a queen both for discouraging or slowing swarming and for identification of the queen.

**Cloake Board** AKA FWOOF (Floor without a floor) = A device to divide a colony into a queenless cell starter and reunite it as a queenright cell finisher without having to open the hive.

**Cluster** = The thickest part of the bees on a warm day, usually the core of the brood nest. On a day below 50F the only location where the bees are. It is used to refer both to the location and to the bees in that location.

**Cocoon** = A thin silk covering secreted by larval honey bees in their cells in preparation for pupation.

**Coffin hive** = a hive that is laid out horizontally instead of vertically.

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

**Colony Collapse Disorder** = A recently named problem where most of the bees in most of the hives in an apiary disappear leaving a queen, healthy brood and only a few bees in the hive with plenty of stores.

**Comb** = The wax portion of a colony in which eggs are laid, and honey and pollen are stored; shaped like hexagons.

**Comb foundation** = A commercially made structure consisting of thin sheets of beeswax with the cell bases of worker cells embossed on both sides to induce the bees to build a particular size of cells.

**Comb Honey** = Honey in the wax combs, usually produced and sold as a separate unit, such as a wooden section 4-1/2" square, or a plastic round ring.

**Compressing a hive** = Removing all excess space that is not occupied by the bees. This is a solution to several beekeeping problems including a failure to thrive, wax moths and small hive beetles as well as good preparation for winter.

**Conical escape** = A cone-shaped bee escape, which permits bees, a one-way exit; used in a special escape board to free honey supers of bees.

**Cordovan bees** = These are a subset of the Italians. In theory you could have a Cordovan in any breed, since it's technically just a color, but the ones for sale in North America are all Italians. They are slightly more gentle, slightly more likely to rob and quite striking to look at. They have no black on them and look very yellow at first sight. Looking closely you see that where the Italians normally have black legs and head, they have a purplish brown legs and head.

**Creamed honey** = Honey that has undergone controlled granulation to produce a finely textured candied or crystallized honey which spreads easily at room temperature. This usually involves adding fine "seed" crystals and keeping at 57° F (14° C).

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

**Crimper** = A device used to put a ripple in the frame wire to both make it tight and to distribute stress better and give more surface to bind it to the wax.

**Cupralarva** = A particular brand of graftless queen rearing system.

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

**Cut-out** = Removing a colony of bees from somewhere that they don't have movable comb by cutting out the combs and tying them into frames.

## **D**

**Dadant** = A beekeeping supply company out of Illinois. Founded by C.P. Dadant who was a pioneer in the modern beekeeping era and invented, among other things, the Jumbo and the square Dadant box. (19 7/8" by 19 7/8" by 11 5/8"), published and wrote for the American Bee Journal and translated Huber's Observations on Bees from French to English and published many books including but not limited to the later versions of The Hive and the Honey Bee.

**Dadant deep** = A box designed by C.P. Dadant that is 11 5/8" deep and the frame is 11 1/4" deep. Sometimes called Jumbo or Extra Deep.

**Dearth** = A period of time when there is no available forage for bees, due to weather conditions (rain, drought) or time of year.

**Decoy hive** aka Bait hive aka Swarm trap = A hive placed to attract stray swarms.

**Deep** = A box that is 9 5/8" deep and the frame is 9 1/4" deep. Sometimes called a Langstroth Deep.

**Deformed Wing Virus** = A virus spread by the Varroa mite that causes crumpled looking wings on fuzzy newly emerged bees.

**Demaree** = The method of swarm control that separates the queen from most of the brood within the same hive and causes them to raise another queen with the goal of a two queen hive, increased production and reduced swarming.

**Depth** = The measurement of a box or frame vertically

**Dequeen** = To remove a queen from a colony

**Detritus** = Wax scales and debris that sometimes build up at the bottom of a natural colony.

**Dextrose** = The D-isomer of glucose, it is a simple sugar (or monosaccharide) and is one of the two main sugars found in honey; forms most of the solid phase in granulated honey.

**Diastase** = A starch digesting enzyme in honey adversely affected by heat; used in some countries to test quality and heating history of stored honey.

**Disease resistance** = The ability of an organism to avoid a particular disease; primarily due to genetic immunity or avoidance behavior.

**Dividing** = Separating a colony to form two or more colonies. AKA a split

**Division** = Separating a colony to form two or more colonies.

**Division board** = A wooden or plastic piece like a frame but tight all the way around used to divide one box into more compartments for nucs.

**Division board feeder** or Frame feeder = A wooden or plastic compartment which is hung in a hive like a frame and contains sugar syrup to feed bees. The original designation (Division) was because it was *used* to make a division between two halves of a box to divide it into nucs, usually for queen rearing or making increase (splits). Most of what is sold under this name have a beespace around them now and cannot be used to make a division.

**Domestic** = Bees that live in a manmade hive. Since all bees are pretty much wild this is a relative term.

**Doolittle method** = A method of queen rearing that involves grafting young larvae into queen cups. Named after G.M. Doolittle who published the method in the late 1800s. The concept was first published in *Die Rechte Bienen Kunst* by Nicol Jacobis published in 1568.

**Dorsal-Ventral Abdominal Vibrations dance** = A dance used to recruit foragers. Also used on queen cells about to emerge and possibly other times.

**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

**Double story or Double deeps** = Referring to a beehive wintering in two deep boxes.

**Double wide** = A box that is twice as wide as a ten frame box. 32 1/2" wide.

**Drawn combs** = Full depth comb ready for brood or nectar with the cell walls drawn out by the bees, completing the comb as opposed to foundation that has not been worked by the bees and has no cell walls yet.

**Drifting** = The movement of bees that have lost their location and enter hives other than their own home. This happens often when hives are placed in long straight rows where returning foragers from the center hives tend to drift to the row ends or when making splits and the field bees drift back to the original hive

**Drone** = The male honeybee which comes from an unfertilized egg (and is therefore haploid) laid by a queen or less commonly, a laying worker.

**Drone comb** = Comb that is made up of cells larger than worker brood, usually in the range of 5.9 to 7.0mm in which drones are reared and honey and pollen are stored.

**Drone brood** = Brood, which matures into drones, reared in cells larger than worker brood. It is noticeably larger than worker brood and the cappings are distinctly dome shaped.

**Drone Congregation Area** = A place that drones from many surrounding hives congregate and wait for a queen to come (mating area). Drones find them by following both pheromone trails and topographical features of the landscape such as tree rows.

**Drone layers** = A drone laying queen (one with no sperm left to fertilize eggs) or laying workers.

**Drone laying queen** = A queen that can lay only unfertilized eggs, due to age, improper or late mating, disease or injury.

**Drone mother hive** = The hive which is encouraged to raise a lot of drones to improve the drone side of mating queens.

**Drumming** = Tapping or thumping on the sides of a hive to make the bees ascend into another hive placed over it or to drive them out of a tree or house. This will not get all of them out, but will move a significant number.

**Dwindling** = Any rapid decline in the population of the hive. The rapid dying off of old bees in the spring; sometimes called spring dwindling or disappearing disease.

**Dysentery** = A condition of adult bees characterized by severe diarrhea (as evidenced by brown or yellow streaks on the front of the hive) and usually caused by long confinement (from either cold or beekeeper manipulation), starvation, low-quality food, or Nosema infection.

## **E**

**Eight frame** = Boxes that were made to take eight frames. Usually between 13 3/4" and 14" wide depending on the manufacturer.

**Eggs** = The first phase in the bee life cycle, usually laid by the queen, is the cylindrical egg 1/16in (1.6 mm) long; it is enclosed with a flexible shell or chorion. It resembles a small grain of rice.

**Eke** = The term originated with skeps and it was "an enlargement" which is the equivalent of today's super. In current usage it usually refers to a shim that is either added to the top for feeding things like pollen patties or added under a shallow to make it into a deep. The term is used more frequently in Britain.

**Electric embedder** = A device allowing rapid embedding of wires in foundation with electrically produced heat

**End bar** = The piece of a frame that is on the ends of the frame. In other words the vertical pieces of the frame.

**Entrance reducer** = A wooden strip used to regulate the size of the entrance.

**Escape board** = A board having one or more bee escapes in it used to remove bees from supers.

### **European Foulbrood**

**Ether wash** = Putting a cupful of bees in a jar with a spray of starter fluid to kill the bees and mites so you can count the Varroa mites. A sugar roll is a non-lethal and much less flammable method of doing the same.

**European Honey Bees** = *Apis mellifera* and all its subspecies. The western honey bee, *Apis mellifera* Linnaeus, naturally occurs in Europe, the Middle East, and Africa. This species has been subdivided into at least 20 recognized subspecies (or races), none of which are native to the Americas. However, subspecies of the western honey bee have been spread extensively beyond their natural range due to economic benefits related to pollination and honey production. Subspecies include bees from Europe, bees originating in Africa, and bees crossbred with those from Africa.

**Eyelets** = A small metal piece fitting into the wire-holes of a frame's end bar; used to keep the reinforcing wires from cutting into the wood.

**Extra shallow** = A box that is 4 11/16 or 4 3/4" deep. Usually used for cut comb. Sometimes modified for sections.

**Extracted honey** = Honey removed from combs usually by means of a centrifugal force (an extractor) in order to leave the combs intact.

**Ezi Queen** = A particular brand of graftless queen rearing system.

## **F**

**Frame feeder** or Division board feeder = A wooden or plastic compartment which is hung in a hive like a frame and contains sugar syrup to feed bees. The original designation (Division) was because it was USED to make a division between two halves of a box to divide it into nucs, usually for queen rearing or making increase (splits). Most of them have a beespace around them now and cannot be used to make a division.

**Feeders** = General term for a wide range of equipment used to feed sugar to bees. Feeders can be inside the hive, at the entrance, or external.

**Fermenting honey** = Honey which contains too much water (greater than 20%) in which yeast has grown and caused it to turn into carbon dioxide, water and alcohol.

**Feral** (queen or bees) = Since all North American bees are considered to have come from domestic stock, what most people call "wild" bees are really "feral" bees. Some use the term for survivor bees that were captured and used to raise queens meaning they WERE feral as opposed to ARE feral.

**Fertile queen** = An inseminated queen.

**Fertilized** = Usually refers to eggs laid by a queen bee, they are fertilized with sperm stored in the queen's spermatheca, in the process of being laid. These develop into workers or queens.

**Festooning** = The activity of young bees, engorged with honey, hanging on to each other usually to secrete beeswax but also in bearding and swarming..

**Field bees** = Worker bees which are usually 21 or more days old and work outside to collect nectar, pollen, water and propolis; also called foragers.

**Flash heater** = A device for heating honey very rapidly to prevent it from being damaged by sustained periods of high temperature; to allow rapid packing of jars.

**Flight path** = Usually refers to the direction bees fly leaving their colony; if obstructed, may cause bees to accidentally collide with the person obstructing and eventually become aggravated.

**Floor Without a Floor** AKA FWOOF = A device to divide a colony into a queenless cell starter and reunite it as a queenright cell finisher without having to open the hive.

**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. This is usually referring to one that has a beespace around it and is used to make the frames easier to remove without rolling and to cut down on condensation on the walls. Sometimes it's used to refer to a board that is bee tight and used to divide a box into two colonies. When designed and used in this manner it should be called a division board.

**Food chamber** = A hive body filled with honey for winter stores. Typically a third deep used in unlimited brood nest management.

**Forage** = Natural food source of bees (nectar and pollen) from wild and cultivated flowers. Or the act of gathering that food.

**Foragers** = Worker bees which are usually 21 or more days old and work outside to collect nectar, pollen, water and propolis; also called field bees.

**Foundation** = Thin sheets of beeswax embossed or stamped with the base of a worker (or rarely drone) cells on which bees will construct a complete comb (called drawn comb); also referred to as comb foundation, it comes wired or unwired and also in plastic as well as one piece foundations and frames as well as different thicknesses (thin surplus, surplus, medium) and different cell sizes (brood =5.4mm, small cell = 4.9mm, drone=6.6mm).

**Foundationless** = A frame with some kind of comb guide that is used without foundation.

**Frame** = A rectangular structure of wood designed to hold honey comb, consisting of a top bar, two end bars, and a bottom bar; usually spaced a bee-space apart in the super.

**Frame feeder** = A plastic container that has the dimensions of a frame, and sits within a super as a frame would. It is filled with sugar syrup. These feeders should have a cap and ladder system to prevent bees from drowning.

**Fructose** = Fruit sugar, also called levulose (left handed sugar), a monosaccharide commonly found in honey that is slow to granulate. Fructose is the primary source for the sweet taste of honey. Unit for unit, fructose (ca. 38% in most honey) is sweeter than glucose (ca. 32%).

**Fumagilin-B** = Bicyclohexyl-ammonium fumagillin, whose trade name was Fumadil-B (Abbot Labs) but now seems to be called Fumagillin-B, is a whitish soluble antibiotic powder discovered in 1952; some beekeepers mix this with sugar syrup and feed it to bees to control Nosema disease. Fumagillin is more soluble than Fumadil. Its use in beekeeping is outlawed in the European Union because it is a suspected teratogen (causes birth defects). Fumagillin can block blood vessel formation by binding to an enzyme called methionine aminopeptidase. Targeted gene disruption of methionine aminopeptidase 2 results in an embryonic gastrulation defect and endothelial cell growth arrest. It is made from the fungus that causes stonebrood, *Aspergillus fumigatus*. Formula: (2E,4E,6E,8E)-10-[[[(3S,4S,5S,6R)- 5-methoxy-4-[2-methyl-3-

(3-methylbut-2-enyl) oxiran-2-yl]-1-oxaspiro[2.5] octan-6-yl]oxy}- 10-oxo-deca-2,4,6,8-tetraenoic acid

**Fumadil-B** = The old trade name for Fumagillin, Bicyclohexyl-ammonium fumagillin, is a whitish soluble antibiotic powder discovered in 1952; some beekeepers mix this with sugar syrup and fed to bees to control Nosema disease. Its use in beekeeping is outlawed in the European Union because it is a suspected teratogen (causes birth defects). Fumagillin can block blood vessel formation by binding to an enzyme called methionine aminopeptidase. Targeted gene disruption of methionine aminopeptidase 2 results in an embryonic gastrulation defect and endothelial cell growth arrest. Fumadil is made from the fungus that causes stonebrood, *Aspergillus fumigatus*.

**Fume board** = A device used to hold a set amount of a volatile chemical (A bee repellent like Bee Go or Honey Robber or Bee Quick) to drive bees from supers.

## G

**Gloves** = Leather, cloth or rubber gloves worn while inspecting bees.

**Glucose** = A simple sugar (or monosaccharide), with several isomers (dextrose is the D-isomer of glucose), and is one of the two main sugars found in honey; forms most of the solid phase in granulated honey.

**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

**Granulate** = The process by which honey, a super-saturated solution (more solids than liquid) will become solid or crystallize; speed of granulation depends of the kinds of sugars in the honey, the crystal seeds (such as pollen or sugar crystals) and the temperature. Optimum temperature for granulation is 57° F (14° C ).

**Guard bees** = Worker bees about three weeks old, which have their maximum amount of alarm pheromone and venom; they challenge all incoming bees and other intruders.

**Gum** = A hollow log beehive, sometimes called a log-gum, made by cutting out that portion of a tree containing bees and moving it to the apiary, or by cutting a hollow portion of a log, putting a board on for a lid and hiving a swarm in it. Since it contains no moveable combs, and since every state in the US has laws that require movable combs, it is therefore illegal.

## **H**

**Hair clip queen catcher** = A device used to catch a queen that resembles a hair clip. Available from most beekeeping supply houses.

**Hemolymph** = The scientific name for insect "blood."

**Hive** = A home for a colony of bees.

**Hive body** = A wooden box containing frames. Usually referring to the size of box being used for brood.

**Hive stand** = A structure serving as a base support for a beehive; it helps in extending the life of the bottom board by keeping it off damp ground. Hive stands may be built from treated lumber, cedar, bricks, concrete blocks etc.

**Hive staples** = Large C-shaped metal nails, hammered into the wooden hive parts to secure bottom to supers, and supers to super before moving a colony.

**Hive tool** = A flat metal device with a curved scraping surface or a lifting hook at one end and a flat blade at the other; used to open hives, pry apart and scrape frames.

**Hoffman frame** = Frames that have the end bars wider at the top than the bottom to provide the proper spacing when frames are placed in the hive.

**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.

**Honey bound** = A condition where the brood nest of a hive is being backfilled with honey. This is a normal condition that is used by the workers to shut down the queen's brood production. It usually happens just before swarming and in the fall to prepare for winter.

**Honeydew** = An excreted material from insects in the order Homoptera (aphids) which feed on plant sap; since it contains almost 90% sugar, it is collected by bees and stored as honeydew honey.

**Honey bee** = The common name for *Apis mellifera*.

**Honey Bee Healthy** = A mixture of essential oils (lemon grass and peppermint) sold to boost the immune system of the bees.

**Honey crop** = The honey that was harvested.

**Honey crop also called honey stomach or honey sac** = An enlargement at the posterior of a bees' esophagus but lying in the front part of the abdomen, capable of expanding when full of liquid such as nectar or water.

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

**Honey flow** = A time when enough nectar-bearing plants are blooming such that bees can store a surplus of honey.

**Honey gate** = A faucet used for removing honey from tanks and other storage receptacles.

**Honey house** = A building used for activities such as honey extraction, packaging and storage.

**Honey plants** = Plants whose flower (or other parts) yields enough nectar to produce a surplus of honey; examples are asters, basswood, citrus, eucalyptus, goldenrod and tupelo.

**Honey Super Cell** = Fully drawn plastic comb in deep depth and 4.9mm cell size

**Honey supers** = Refers to boxes of frames used for honey production. From the Latin "super" for above as a designation for any box above the brood nest.

**Hopkins method** = A graftless method of queen rearing that involves putting a frame of young larvae horizontally above a brood nest.

**Hopkins shim** = A shim used to turn a frame flatways for queen rearing without grafting.

**Horizontal hive** = a hive that is laid out horizontally instead of vertically in order to eliminate lifting boxes.

**Hornets and Yellow Jackets** = Social insects belonging to the family Vespidae. Both yellow jackets and hornets belong to the genera *Vespula* and *Dolichovespula*. They nest in paper or foliage material, or burrow in soil, with only an overwintering queen. Fairly aggressive, and carnivorous, but generally beneficial, they can be a nuisance to man. Hornets and Yellow Jackets are a subset of the much broader category of "wasps" (Order Hymenoptera: Suborder Apocrita), and are often confused with Honey Bees. Hornets, Yellow Jackets and Wasps are easy to distinguish by their shiny hairless body, and aggressiveness. Honey Bees are generally fuzzy brown or tan, and basically docile in nature.

**Hot** (temperament) = Bees that are overly defensive or outright aggressive.

**Housel positioning theory** = A theory proposed by Michael Housel that natural brood nests have a predictable orientation of the "Y" in the bottom of the cells. Basically that when looking at one side an upside down "Y" will appear in the bottom and from the other side a right side up "Y" will appear and the center comb will have a sideways "Y" that is the same from both sides. Basically if we assume a third bar in my notation to make these "Y"s and assume a nine frame hive and each pair is what the comb looks like from that side.

**Hydroxymethyl furfural** = A naturally occurring compound in honey that rises over time and rises when honey is heated. May be used to identify overheated, or cooked, honey.

**Hypopharyngeal gland** = A gland located in the head of a worker bee that secretes "royal jelly". This rich blend of proteins and vitamins is fed to all bee larvae for the first three days of their lives and queens during their entire development.

## I

**Israeli Acute Paralysis Virus** aka IAPV = The virus had been blamed for CCD. First discovered in Israel where it was quite devastating to colonies. Additional research has failed to confirm IAPV central role in CCD.

**Illinois** = A box that is 6 5/8" in depth and the frames are 6 1/4" in depth. AKA Medium AKA Western AKA 3/4 depth.

**Imirie shim** = A device credited to the late George Imirie that is a 3/4" shim with an entrance built in. It allows you to add an entrance between any two pieces of equipment on the hive.

**Imkerpfeife** = A small smoking pipe designed for a beekeeper where you cannot inhale but only exhale the smoke allowing you to blow it in a specific location. The beekeeper often has a hole in the veil for the stem. Popular in Germanic countries.

**Increase** = To add to the number of colonies, usually by dividing those on hand. See Split.

**Infertile** = Incapable of producing a fertilized egg, as a laying worker or drone laying queen. Unfertilized eggs develop into drones.

**Inhibine** = Antibacterial effect of honey caused by enzymes and an accumulation of hydrogen peroxide, a result of the chemistry of honey.

**Inner cover** = An insulating cover fitting on top of the top super but underneath the outer cover, with an oblong hole in the center. Used to be called a "quilt board". In the old days these were often made of cloth.

**Instar** = Stages of larval development. A Honey Bee goes through five instars. The best queens are grafted in the 1st (preferably) or 2nd instar and not later than that.

**Instrumental insemination** aka II or AI = The introduction of drone spermatozoa into the spermatheca of a virgin queen by means of special instruments

**Invertase** = An enzyme in honey, which splits the sucrose molecule (a disaccharide) into its two components dextrose and levulose (monosaccharides). This is produced by the bees and put into the nectar to convert it in the process of making honey.

**Isomerase** = A bacterial enzyme used to convert glucose in corn syrup into fructose, which is a sweeter sugar; called isomerase, is now used as a bee feed.

**Italian bees** = A common race of bees, *Apis mellifera ligustica*, with brown and yellow bands, from Italy; usually gentle and productive, but tend to rob.

## **J**

**Jenter** = A particular brand of graftless queen rearing system.

## **K**

**Kashmir Bee Virus** = A widespread disease of bees, spread more quickly by Varroa, found everywhere there are bees.

**Kenya Top Bar Hive** = A top bar hive with sloped sides. The theory is that they will have less attachments on the sides because of the slope.

**Kidneys** = Bees don't actually have kidneys. They have malpighian tubules which are thin filamentous projects from the junction of the mid and hind gut of the bee that cleanse the hemolymph (blood) of nitrogenous cell wastes and deposit them as non-toxic uric acid crystals into the undigestible food wastes for elimination. They serve the same purpose in bees as kidneys do in higher animals.

## **L**

**Landing board** = A small platform at the entrance of the hive for the bees to land on before entering the hive.

**Lang** = Short for Langstroth hive.

**Langstroth, Rev. L.L.** = A Philadelphia native and minister (1810-95), he lived for a time in Ohio where he continued his studies and writing of bees; recognized the importance of the bee space, resulting in the development of the movable-frame hive.

**Langstroth hive** = The basic hive design of L.L. Langstroth. In modern terms any hive that takes frames that have a 19" top bar and fit into a box 19 7/8" long. Widths vary from five frame nucs to eight frame boxes to ten frame boxes and from Dadant deeps, Langstroth deeps, Mediums, Shallows and Extra Shallow. But all would still be Langstroths. This would distinguish them from WBC, Smith, National DE etc.

**Large Cell** = Standard foundation size = 5.4mm cell size

**Larva, open** = The second developmental stage of a bee, starting the 4th day from when the egg is laid until it's capped on about the 9th or 10th day.

**Larva, capped** = The second developmental stage of a bee, ready to pupate or spin its cocoon (about the 10th day from the egg).

**Laying workers** = Worker bees which lay eggs in a colony hopelessly queenless; such eggs are infertile, since the workers cannot mate, and therefore become drones.

**Leg baskets** = Also called pollen baskets, a flattened depression surrounded by curved spines

located on the outside of the tibiae of the bees' hind legs and adapted for carrying flower pollen and propolis.

**Lemon Grass essential oil** = Essential oil used for swarm lure. Lemongrass oil contains all of the compounds known to affect the behavior of the bees and all but one of the compounds of Nasonov pheromone. Lemongrass oil major components:

- Geraniol (isomer of nerol)
- Nerolic Acid (isomer of geranic acid)
- (E)-citral (geranial)
- (Z)-citral (neral)
- Geranic Acid (isomer of nerolic acid)
- Farnesol

**Levulose** = Also called d-fructose (fruit sugar), an optical isomer of fructose. A monosaccharide commonly found in honey that is slow to granulate.

**Long hive** = a hive that is laid out horizontally instead of vertically.

## **M**

**Malpighian tubules** = Thin filamentous projects from the junction of the mid and hind gut of the bee that cleanse the hemolymph of nitrogenous cell wastes and deposit them as nontoxic uric acid crystals into the indigestible food wastes for elimination. They serve the same purpose as kidneys in higher animals.

**Mandibles** = The jaws of an insect; used by bees to form the honey comb and scrape pollen, in fighting and picking up hive debris.

**Marking** = Painting a small dot of enamel on the back of the thorax of a queen to make her easier to identify and so you can tell if she has been superseded.

**Marking pen** = An enamel pen used to mark queens. Available at local hardware stores as enamel pens. Also from beekeeping supply houses as Queen marking pens.

**Marking Tube** = A plastic tube commonly available from beekeeping supply houses that is used to safely confine a queen while you mark her.

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

**Mating nuc** = A small nuc for the purpose of getting queens mated used in queen rearing. These vary from two frames of the standard size used by that beekeeper for brood, to the mini-mating nucs sold for that purpose with smaller than normal frames.

**Maxant** = A beekeeping equipment manufacturer that makes uncappers, extractors, hive tools etc.

**Medium** = A box that is 6 5/8" in depth and the frames are 6 1/4" in depth. AKA Illinois AKA Western AKA 3/4 depth.

**Medium brood (foundation)** = When used to refer to foundation, medium refers to the thickness of the wax NOT the depth of the frame. In this case it's medium thick and of worker sized cells.

**Melissococcus pluton** = New name for the bacterium that causes European Foulbrood. The old name was Streptococcus pluton.

**Midnite** = An F1 hybrid cross of two specific lines of Caucasians and Carniolans. Originated by Dadant and Sons and sold for years by York.

**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.

**Migratory cover** = An outer cover used without an inner cover that does not telescope over the sides of the hive; used by commercial beekeepers who frequently move hives. This allows hives to be packed tightly against one another because the cover does not protrude over the sides.

**Miller Bee Supply** = A beekeeping supply company out of North Carolina. They have eight frame equipment.

**Miller feeder**

**Miller Method** = A graft-less method of queen rearing that involves a ragged edge on some brood comb for the bees to build queen cells on.

**Moisture content** = In honey, the percentage of water should be no more than 18.6; any percentage higher than that will allow honey to ferment.

**Mouse guard** = A device to reduce the entrance to a hive so that mice cannot enter. Commonly #4 hardware cloth.

**Movable combs** = Combs that are built in a hive that allows them to be manipulated and inspected. Top bar hives have movable combs but not frames. Langstroth hives have movable combs IN frames.

**Movable frames** = A frame constructed in such a way to preserve the bee space, so they can be easily removed; when in place, it remains unattached to its surroundings.

**N**

**Nadiring** = Adding boxes below the brood nest. This is a common practice with foundationless including Warre' hives.

**Nasonov** = A pheromone used given off by a gland under the tip of the abdomen of workers that serves primarily as an orientation pheromone. It is essential to swarming behavior and nasonoving is set off by disturbance of the colony. It is a mixture of seven terpenoids, the majority of which is Geranial and Neral, which are a pair of isomers usually mixed and called citral. Lemongrass (Cymbopogon) essential oil is mostly these scents and is useful in bait hives and to get newly hived bees or swarms to stay in a hive.

The constituents of Nasonov pheromone:

- Geraniol (isomer of nerol)
- Nerolic Acid (isomer of geranic acid)
- (E)-citral (geranial)
- (Z)-citral (neral)
- Geranic Acid (isomer of nerolic acid)
- Nerol (isomer of geraniol)
- Farnesol

The essential constituents of Nasonov for effects on bees: "A 1:1:1 mixture of geraniol + nerolic acid + (E)- and (Z)-citrals was as effective as a mixture of all the seven components in equal proportions"

- Geraniol (isomer of nerol)
- Nerolic acid (isomer of geranic acid)
- (E)-citral (geranial)
- (Z)-citral (neral)

**Nasonoving** = Bees who have their abdomens extended and are fanning the Nasonov pheromone. The smell is lemony

**Natural cell** = Cell size that bees have built on their own without foundation.

**Natural comb** = Comb that bees have built on their own without foundation.

**Nectar** = A liquid rich in sugars, manufactured by plants and secreted by nectary glands in or near flowers; the raw material for honey.

**Nectar flow** = A period of time when nectar is available.

**Nectar Management** aka Checkerboarding = a method of swarm control originated by Walt Wright where the stores above the brood chamber are alternated with drawn comb late in the winter. Reports from those using it are of massive harvests and no swarming.

**New World Carniolans** = A breeding program originated by Sue Cobey to find and breed bees from the US with Carniolan traits and other commercially useful traits.

**Newspaper method** = A technique to join together two strange colonies by providing a temporary newspaper barrier.

**Nicot** = A particular brand of graftless queen rearing system.

## **Nosema**

**Nuc, nuclei, nucleus** = A small colony of bees often used in queen rearing or the box in which the small colony of bees resides. The term refers to the fact that the essentials, bees, brood, food, a queen or the means to make one, are there for it to grow into a colony, but it is not a full sized colony.

**Nurse bees** = Young bees, usually three to ten days old, which feed and take care of developing brood.

## **O**

**Observation Hive** = A hive made largely of glass or clear plastic to permit observation of bees at work

**Open-air Nest** = A colony that has built its nest in the open limbs of a tree rather than in the hollow of a tree or a hive.

**Open Mesh Floor** = A bottom board with screen (usually #8 hardware cloth) for the bottom to allow ventilation and to allow Varroa mites to fall through. In the US this is typically called a Screened Bottom Board.

**Outer cover** = The last cover that fits over a hive to protect it from rain; the two most common kinds are telescoping and migratory covers.

**Outyard** = Also called out apiary, it is an apiary kept at some distance from the home or main apiary of a beekeeper; usually over a mile away from the home yard.

**Ovary** = The egg producing part of a plant or animal.

**Ovule** = An immature female germ cell, which develops into a seed.

**Ovarirole** = Any of several tubules that compose an insect ovary.

**Oxytetracycline aka Oxytet** = An antibiotic sold under the trade name Terramycin; used to control American and European foulbrood diseases.

## **P**

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

**Parasitic Mite Syndrome** aka Bee Parasitic Mite Syndrome = A set of symptoms that are caused by a major infestation of Varroa mites. Symptoms include the presence of Varroa mites, the presence of various brood diseases with symptoms similar to that of foulbroods and sacbrood but with no predominant pathogen, AFB-like symptoms, spotty brood pattern, increased supersedure of queens, bees crawling on the ground, and a low adult bee population.

**Parasitic Mites** = Varroa and tracheal mites are the mites with economic issues for bees. There are several others that are not known to cause any problems.

**Paralysis aka APV aka Acute Paralysis Virus** = A viral disease of adult bees which affects their ability to use legs or wings normally.

**Parthenogenesis** = The development of young from unfertilized eggs laid by virgin females (queen or worker); in bees, such eggs develop into drones.

**Para Dichloro Benzene (aka PDB aka Paramoth)** = Wax moth treatment for stored combs.

**PermaComb** = Fully drawn plastic comb in medium depth and about 5.1mm equivalent cell size after allowing for cell wall thickness and taper of the cell..

**PF-100 and PF-120** = A small cell one piece plastic frame available from Mann Lake. Measures 4.95mm cell size. Users report excellent acceptance and perfectly drawn cells.

**Phoretic** = In the context of Varroa mites it refers to the state where they are on the adult bees instead of in the cell either developing or reproducing.

**Piping** = A series of sounds made by a queen, frequently before she emerges from her cell. When the queen is still in the cell it sounds sort of like a quack quack quack. When the queen has emerged it sounds more like zoot zoot zoot.

**Play flights** aka orientation flights = Short flights taken in front and in the vicinity of the hive by young bees to acquaint them with hive location; sometimes mistaken for robbing or swarming preparations.

**Pollen** = The dust-like male reproductive cells (gametophytes) of flowers, formed in the anthers, and important as a protein source for bees; pollen is essential for bees to rear brood.

**Pollen basket** = An anatomical structure on the bees legs where pollen and propolis is carried.

**Pollen bound** = A condition where the brood nest of a hive is being filled with pollen so that there is no where for the queen to lay.

**Pollen box** = A box of brood moved to the bottom of the hive during the honey flow to induce the bees to store pollen there, or a box of pollen frames that was put on the bottom purposefully. This provides pollen stores for the fall and winter. The term was coined by Walt Wright.

**Pollen pellets or cakes** = The pollen packed in the pollen baskets of bees and transported back to the colony made by rolling in the pollen, brushing it off and mixing it with nectar and packing it into the pollen baskets.

**Pollen substitute** = A food material which is used to substitute wholly for pollen in the bees' diet; usually contains all or part of soy flour, brewers' yeast, wheat, powdered sugar, or other ingredients. Research has shown that bees raised on substitute are shorter lived than bees raised on real pollen.

**Pollen supplement** = A mixture of pollen and pollen substitutes used to stimulate brood rearing in periods of pollen shortage

**Pollen trap** = A device for collecting the pollen pellets from the hind legs of worker bees; usually forces the bees to squeeze through a screen mesh, usually #5 hardware cloth, which scrapes off the pellets.

**Porter bee escape** = Introduced in 1891, the escape is a device that allows the bees a one-way exit between two thin and pliable metal bars that yield to the bees' push; used to free honey supers of bees but may clog since drone bees often get stuck.

**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** = Plant resins collected, mixed with enzymes from bee saliva and used to fill in small spaces inside the hive and to coat and sterilize everything in the hive. It has antimicrobial properties.

**Propolize** = To fill with propolis, or bee glue.

**Pupa** = The third stage in the development of the bee during which it is inactive and sealed in its cocoon.

**Push In Cage** = Cage made of #8 hardware cloth used to introduce or confine queens to a small section of comb. Usually used over some emerging brood.

## Q

**Queen** = A fully developed female bee responsible for all the egg laying of a colony.

**Queen Bank** = Putting multiple caged queens in a nuc or hive.

**Queen cage** = A special cage in which queens are shipped and/or introduced to a colony, usually with 4 to 7 young workers called attendants, and usually a candy plug.

**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; usually over an inch in length, it hangs vertically from the comb.

**Queen clipping** = Removing a portion of one or both wings of a queen to prevent her from flying or to better identify when she has been replaced.

**Queen cup** = A cup-shaped cell hanging vertically from the comb, but containing no egg; also made artificially of wax or plastic to raise queens

**Queen excluder** = A device made of wire, wood or zinc (or any combination thereof) having openings of .163 to .164 inch, which permits workers to pass but excludes queens and drones; used to confine the queen to a specific part of the hive, usually the brood nest.

**Queenright** = A colony that contains a queen capable of laying fertile eggs and making appropriate pheromones that satisfy the workers of the hive that all is well.

**Queen Mandibular Pheromone aka Queen substance aka QMP** = A pheromone produced by the queen and fed to her attendants who share it with the rest of the colony that gives the colony the sense of being queenright. Chemically QMP is very diverse with at least 17 major components and other minor ones. 5 of these compounds are: 9-ox-2-decenoic acid (9ODA) + cis & trans 9 hydroxydec-2-enoic acid (9HDA) + methyl-p-hydroxybenzoate (HOB) and 4-hydroxy-3-methoxyphenylethanol (HVA). Newly emerged queens produce very little of this. By the sixth day they are producing enough to attract drones for mating. A laying queen makes twice that amount. QMP is responsible for inhibition of rearing replacement queens, attraction of drones for mating, stabilizing and organizing a swarm around the queen, attracting a retinue of attendants, stimulating foraging and brood rearing, and the general moral of the colony. Lack of it also seems to attract robber bees.

**Queen muff** = A screen wire tube that resembles a "muff" to keep your hands warm in shape but is used to keep queens from escaping when marking them or releasing attendants. Available from Brushy Mountain.

## **R**

**Rabbet** = In wood working a groove cut into wood. The frame rests in a Langstroth hive are rabbets and the corners are sometimes done as rabbets and sometimes as finger or box joints.

## **Races of Bees**

**Radial extractor** = A centrifugal force machine to throw out honey but leave the combs intact; the frames are placed like spokes of a wheel, top bars towards the wall, to take advantage of the upward slope of the cells.

**Rauchboy** = A particular brand of smoker that has an inner chamber to provide more consistent oxygen to the fire.

**Raw honey** = Honey that has not been finely filtered or heated.

**Regression** = As applied to cell size, large bees, from large cells, cannot build natural sized cells. They build something in between. Most will build 5.1 mm worker brood cells. Regression is getting large bees back to smaller bees so they can and will build smaller cells.

**Requeen** = To replace an existing queen by removing her and introducing a new queen.

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

**Retinue** = Worker bees that are attending the queen.

**Reversing aka Switching** = The act of exchanging places of different hive bodies of the same colony; usually for the purpose of nest expansion, the super full of brood and the queen is placed below an empty super to allow the queen extra laying space.

**Robber screen** = A screen used to foil robbers but let the local residents into the hive.

**Robbing** = The act of bees stealing honey/nectar from the other colonies; also applied to bees cleaning out wet supers or cappings left uncovered by beekeepers and sometimes used to describe the beekeeper removing honey from the hive.

**Ropy** = A quality of forming an elastic rope when drawn out with a stick. Used as a diagnostic test for American foulbrood.

**Round sections** = Sections of comb honey in plastic round rings instead of square wooden boxes. Usually Ross Rounds.

**Rolling** = A term to describe what happens when a frame is too tight or pulled out too quickly and bees get pushed against the comb next to it and "rolled". This makes bees very angry and is sometimes the cause of a queen being killed.

**Royal jelly** = A highly nutritious, milky white secretion of the hypopharyngeal gland of nurse bees; used to feed the queen and young larvae.

**Russian bees**

**S**

**Sac Brood Virus**

**Sclerite** = Same as Tergite. An overlapping plate on the dorsal side of an arthropod that allows it to flex.

**Screened Bottom Board** = A bottom board with screen (usually #8 hardware cloth) for the bottom to allow ventilation and to allow Varroa mites to fall through. In Europe this is called an Open Mesh Floor.

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

**Scutellum** = Shield shaped portion of the back of the thorax of some insects including *Apis mellifera* (honey bees). In this sense it is sometimes used as a synonym for Scutum. Also used with other terms to refer to portions of the Scutum.

**Scutum** = Shield shaped portion of the back of the thorax of some insects including *Apis mellifera* (honey bees). Usually divided into three areas: the anterior prescutum, the scutum, and the smaller posterior scutellum.

**Sections** = Small wooden (or plastic) boxes used to produce comb honey.

**Self-spacing frames aka Hoffman frames** = Frames constructed so that they are a bee space apart when pushed together in a hive body.

**Settling tank** = A large capacity container used to settle extracted honey; air bubbles and debris will float to the top, clarifying the honey.

**Shallow** = A box that is 5 11/16 or 5 3/4" deep with frames that are 5 1/2" deep.

**Shaken swarm** = An artificial swarm made by shaking bees off of combs into a screened box and then putting a caged queen in until they accept her. One method for making a divide. Also the method used to make packages of bees.

**Skep** = A beehive without moveable combs, usually made of twisted straw in the form of a basket; its use is illegal in all the states in the U.S as the combs are not inspectable.

**Slatted rack** = A wooden rack that fits between the bottom board and hive body. Bees make better use of the lower brood chamber with increased brood rearing, less comb gnawing, and less congestion at the front entrance. Popularized by C.C. Miller and Carl Killion.

**Slungum** = The refuse from melted combs and cappings after the wax has been rendered or removed; usually contains cocoons, pollen, bee bodies and dirt.

**Small Cell** = 4.9mm cell size. Used by some beekeepers to control Varroa mites.

**Small Hive Beetle** = A recently imported pest whose larvae will destroy comb and ferment honey.

**Smith method** = A method of queen rearing that uses a swarm box as a cell starter and grafting larvae into queen cups.

**Smoker** = A metal container with attached bellows which burns organic fuels to generate smoke; used to control aggressive behavior of bees during colony inspections.

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

**Sperm cells** = The male reproductive cells (gametes) which fertilize eggs; also called spermatozoa.

**Spermatheca** = A small sac connected with the oviduct (vagina) of the queen bee in, which is stored, the spermatozoa received in mating with drones.

**Spiracles** = Openings into the respiratory system on a bee that can be closed at will. These are on the sides of the bee. They are considerably smaller than the Trachea they protect. The first thoracic spiracle is the one that is infiltrated by the tracheal mites as it is the largest. If you throw bees in water they will shut their spiracles completely to prevent drowning. When closed the spiracles are air tight.

**Split** = To divide a colony for the purpose of increasing the number of hives.

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

**Starline** = An Italian bee hybrid known for vigor and honey production. It was an F1 cross of two specific lines of Italian bees. Originated by Dadant and sons and produced for many years by York.

**Starter hive** aka a Swarm box = A box of shaken bees used to start queen cells.

**Sting** = An organ belonging exclusively to female insects developed from egg laying mechanisms, used to defend the colony; modified into a piercing shaft through which venom is injected.

**Streptococcus pluton** = Old deprecated name for the bacterium that causes European Foulbrood. The new name is *Melissococcus pluton*.

**Sucrose** = Principal sugar found in nectar.

**Sugar syrup** = Feed for bees, containing sucrose or table (cane or beet) sugar and hot water in various ratios. Usually 1:1 in the spring and 2:1 in the fall.

**Sugar roll test** = A test for Varroa mites that involves rolling a cupful of bees in powdered sugar and counting the number of mites dislodged. This was invented as a non-lethal alternative to an alcohol wash or an ether roll.

**Super** = A box with frames in which bees store honey; usually placed above the brood nest.

**Supering** = The act of placing honey supers on a colony in expectation of a honey flow.

**Supersedure** = Rearing a new queen to replace the mother queen in the same hive; shortly after the daughter queen begins to lay eggs, the mother queen often disappears.

**Suppressed Mite Reproduction aka SMR** = Queens from a breeding program by Dr. John Harbo that have less Varroa problems probably due to increased hygienic behavior..

**Surplus (foundation)** = Refers to thin foundation used for cut comb honey.

**Surplus honey** = Any extra honey removed by the beekeeper, over and above what the bees require for their own use, such as winter food stores.

**Survivor stock** = Bees raised from bees that were surviving without treatments.

**Swarm** = A temporary collection of bees, containing at least one queen that split apart from the mother colony to establish a new one; a natural method of propagation of honey bee colonies.

**Swarm box** aka a Starter hive = A box of shaken bees used to start queen cells.

**Swarm cell** = Queen cells usually found on the bottom of the combs before swarming.

**Swarm commitment** = The point just after swarm cutoff where the colony is committed to swarming.

**Swarm cutoff** = The point at which the colony decides to swarm or not. Past this point they either commit to swarming or they commit to swarming or they commit to just looking out for colony stores for the coming winter.

**Swarm trap aka Bait hive aka Decoy hive** = A hive placed to attract stray swarms.

**Swarm preparation** = The sequence of activities of the bees that is leading up to swarming. Visually you can see this start at backfilling the brood nest so that the queen has no where to lay.

**Swarming** = The natural method of propagation of the honey bee colony.

**Swarming season** = The time of year, usually late spring to early summer, when swarms usually issue.

## **T**

**Tanzanian Top Bar Hive** = A top bar hive with vertical sides.

**Telescopic cover** = A cover with a rim that hangs down all the way around it usually used with a inner cover under it.

**Ten frame** = A box made to take ten frames. 16 1/4" wide.

**Terramycin** = Called oxytet in Canada and other locations. It is an antibiotic that is often used as a preventative for American and a cure for European foulbrood diseases.

**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.

**Tergal** = Pertaining to the Tergum.

**Tergite** = A hard overlapping plate on the dorsal portion of an arthropod that allows it to flex. Also known as sclerite.

**Tergum (plural terga)** = The dorsal portion of an arthropod.

**Thelytoky** = A type of parthenogenetic reproduction where unfertilized eggs develop into females. Usually with bees this is referring to a colony rearing a queen from a laying worker egg. This is very rare, but documented, with European Honey Bees. It is common with Cape Bees.

**Thin surplus foundation** = A comb foundation used for comb honey or chunk honey production which is thinner than that used for brood rearing. Thinner than surplus.

**Thixotropic** = A quality of a liquid where its viscosity gets thinner when shaken, stirred or agitated and thicker when left undisturbed so that it becomes a gel. In the case of honey some honey sources have this quality such as heather and manuka and these often require special ways of extracting.

**Thorax** = The central region of an insect to which the wings and legs are attached.

**Tiger striped (queen)** = Markings of a particular type on a queen. Not striped like a worker (who have very even bands) but more like "flames".

**Top bar** = The top part of a frame or, in a top bar hive, just the piece of wood from which the comb hangs.

**Top Bar Hive** = a hive with only top bars and no frames that allows for movable comb without as much carpentry or expense.

### **Top feeder**

**Top supering** = The act of placing honey supers on TOP of the top super of a colony in expectation of a honey flow as opposed to putting it under all the other supers, and directly on top of the brood box, which would be BOTTOM supering..

**Tracheal Mites** = A mite that infests the trachea of the honey bee. Resistance to tracheal mites is easily bred for.

**Transferring or cut out** = The process of changing bees and combs from trees, houses or bee gums or skeps to movable frame hives.

**Travel stains** = The darkened appearance on the surface of honeycomb caused by bees walking over its surface.

**Triple-wide** = A box that is three times as wide as a standard ten frame box. 48 3/4".

**Trophallaxis** = The transfer of food or pheromones among members of the colony through mouth-to-mouth feeding. It is used to keep a cluster of bees alive as the edges of the cluster collect food and share it through the cluster. It is also used for communication as pheromones are shared. One very important one is QMP (Queen Mandibular Pheromone) which is shared by trophallaxis throughout the hive to let the hive know they are queenright.

**Twelve frame** = A box made to take twelve frames. This is 19 7/8" by 19 7/8".

**Two Queen Hive** = A management method where more than one queen exists in a hive. The purpose is you get more bees and more honey with two queens.

**Tylan, Tylosin, Tylocine** = Different names for the same antibiotic. It was at one time approved for treatment of Terramycin resistant AFB. It currently requires a prescription from a Veterinarian in the US and is illegal for use on bees in most countries.

## U

**Uncapping knife** = A knife used to shave off the cappings of sealed honey prior to extraction; hot water, steam or electricity can heat the knives.

**Uncapping tank** = A container over which frames of honey are uncapped; usually strains out the honey which is then collected.

**Unfertilized** = An ovum or egg, which has not been united with the sperm.

**Uniting** = Combining two or more colonies to form a larger colony. Usually done with a sheet of newspaper between.

**Unlimited Brood Nest** aka "food chamber" = running bees in a configuration where the brood nest is not limited by an excluder and they are usually overwintered in more boxes to allow more expansion in the spring.

## V

**Varroa destructor** used to be called Varroa Jacobsoni

**Veil** = A protective netting that covers the face and neck; allows ventilation, easy movement and good vision while protecting the primary targets of guard bees.

**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 anaphylactic shock. A person with this condition should carry an emergency insect sting kit at all times during warm weather

**Virgin queen** = An unmated queen bee.

**Vitellogenin** = In the context of bees, this is a protein that is in the fat bodies of bees that results in greater longevity. There is a much higher amount in winter bees as opposed to summer bees. There is a feedback loop in the colony where vitellogenin and juvenile hormone mutually suppress each other. This causes bees raised in the fall or leading up to swarming to have higher levels of vitellogenin and therefore longer lives than at other times.

## **W**

**Walter T. Kelley** = A beekeeping supply company out of Clarkson, KY. They have many things no one else does.

**Washboarding** = When the bees on the landing board or the front of a hive are moving in unison resembling a line dance.

**Warming cabinet** = An insulated box or room heated to liquefy honey or to heat unextracted honey to speed extraction.

**Wax Dipping Hives** = A method of protecting wood and also of sterilizing from AFB where the equipment is "fried" in a mixture of wax and gum resin. Usually done with paraffin sometimes done with beeswax.

**Wax glands** = The eight glands located on the last 4 visible, ventral abdominal segments of young worker bees; they secrete beeswax flakes.

**Wax moths**

**Wax scale or flake** = A drop of liquid beeswax that hardens into a scale upon contact with air; in this form it is shaped into comb.

**Wax tube fastener** = A metal tube for applying a fine stream of melted wax to secure a sheet of foundation into a groove on a frame. Sometimes called a Van Deusen wax-tube fastener after the inventor.

**Western** = A box that is 6 5/8" in depth and the frames are 6 1/4" in depth. AKA Illinois AKA Medium AKA 3/4 depth.

**Western Bee Supply** = A beekeeping supply company out of Montana. The company that makes all of Dadant's equipment. Also sell eight frame equipment.

**Windbreaks** = Specially constructed, or naturally occurring barriers to reduce the force of the (winter) winds on a beehive.

**Winter cluster** = A tight ball of bees within the hive to generate heat; forms when outside temperature falls below 50 degrees F.

**Winter hardiness** = The ability of some strains of honeybees to survive long winters by frugal use of stored honey.

**Wire, frame** = Thin 28# wire used to reinforce foundation destined for the broodnest or honey extractor.

**Wire cone escape** = A one-way cone formed by window screen mesh used to direct bees from a house or tree into a temporary hive.

**Wire crimpers** = A device used to put a ripple in the frame wire to both make it tight and to distribute stress better and give more surface to bind it to the wax.

**Worker bees** = Infertile female bee whose reproductive organs are only partially developed responsible for carrying out all the routine of the colony.

**Worker comb** = Comb measuring between 4.4mm and 5.4mm, in which workers are reared and honey and pollen are stored.

**Worker Queen** aka laying workers = Worker bees which lay eggs in a colony hopelessly queen-less; such eggs are not fertilized.