



Buzzword



West Sound Beekeepers Association

Editor: Basil Gunther 360 297 5075

Volume X Issue XI June 2007

September 18, 2007 Meeting

7:00P.M.

Stedman's Bee Supplies

Silverdale, WA

Next meeting October 16, 2007

Program

6 PM Bee—ginner Class

7 PM Program/Meeting

8:30? Queen Rearing Group

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WHO CAN IDENTIFY THIS BEE??

Answer is somewhere in this newsletter!!

President /Webmaster George Purkett



360 895 9116

Vice President/Librarian Roy Barton



360 613 0175

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360 297 5075

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360 692 9453

Education Chair Paul Lundy



360 297 6743

Queen Rearing Group Leader Maya Bewig



360-379-5564

This Meeting's Refreshments:

Drinks: Paul Lundy

Snacks: Andria Houghton

Message From the President:

I am a yellow trout. My son is a yellow trout, although he would prefer to be a green tadpole. My wife is excited to be a red jaguar. My daughter is happy with being a gold falcon. What the Heck am I talking about? This is information we just found out by taking a short quiz on the Internet. The Internet is filled with amazing bits of information. I must admit that not all the information available contains value. Ok, maybe I could use my time more wisely by reading about the latest apparent cause of Colony Collapse Disorder -- the combination of Israeli Acute Paralysis Virus (IAPV) and Varroa mites. Naw, I'll let you look that one up.

What have you been up to in the last month? I have pulled a small pittance of honey from some of my hives and have started feeding the rest. I have been trying to build up some nuc's but may instead have been turning them into feeding stations for the larger hives...difficult to tell.

I fired up my paraffin-dipping tank to disinfect some old equipment and repainted it to make it look pretty. I also have had some success with cleaning up some old plastic frames that had been used several years and had very black hard comb. First I scraped what I could off. Then soaked the frames in a water bath at 140 degrees F and quickly pulled out and sprayed off with a hose ...this got most of the old comb off but the foundation was still very dirty looking. I then soaked them in a lye solution at 140 deg F and blasted off with the hose sprayer. This does a nice job and the plastic is nearly clean of all propolis and wax. If you get above 140, the plastic will start to deform and fit nicely in the garbage can. My next trick will be how to re-coat the plastic with a wax film. I am guessing either a wax/water bath for dipping or a heated wax sprayer. I must confess I have spent a lot of time and made a big mess in trying to clean up a few plastic frames and the stench was awesome. Like most of my other experimentation I did not find it cost effective. If you research cleaning plastic frames on the Internet you will inevitably find reference to cleaning frames in the dishwasher. Do not clean your frames in the dishwasher unless you are single and can afford a new dishwasher. I will leave that one there.

George
Super Drone

Cats and Bees and Bees and Cats



*Cats are like Bees. They've mites and fleas.
They are fuzzy and hum. They like being your chum.
Leaving presents on the stoop, or the hood of your coupe.
And when you pull their tail, get ready to wail.
It takes longer to pet a cat. Beekeepers are really glad at that.
Cats come running at the sound of the tuna can,
Bees come flying at the smell of the honey tin.*

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August Picnic



The August picnic was well attended and there was more than enough tasty food for all! Many thanks to the Stedmans for hosting the picnic. They really went all out and had delicious pork, cooked six ways from Sunday and plenty of it! Way to go Al & Barbara! The weather cooperated by holding off any rain until most picnickers had gone home. Eugene Brennan won the Beekeepers Jacket donated by Mann Lake Ltd. \$55 dollars were raised in the raffle.

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Crystallized Honey

By Roger A. Morse

All honeys will crystallize naturally; some do so in weeks and others may not granulate in a year or more. The rapidity in which crystallization takes place depends on many things including the ratios of the two principal sugars in honey, the presence of nuclei on which the crystals may grow and temperature.

The two most common sugars in honey are fructose and glucose. Fructose is sometimes called levulose and glucose is sometimes called dextrose. The first terms mentioned are considered most correct. Both sugars contain six carbon atoms are made when the honeybees add the enzyme invertase to sucrose, which is a twelve carbon sugar and the common sugar in nectar. The ratio of fructose to glucose varies greatly; when more fructose than glucose is present the honey is less likely to crystallize and vice versa.

Granulated honey, which has fine crystals has a much better flavor than that with coarse crystals. Crystallized or finely granulated honey made under controlled conditions is now sold around the world. The crystals in properly made granulated honey are so fine that they cannot be detected by the tongue and in the mouth granulated honey has a texture much like that of butter. The fact that granulated honey had much appeal tastewise, in addition to being a product which would not drip, was long recognized and beekeepers made many attempts to develop a process to make a finely granulated product.

The Dyce Process

Dr. E. J. Dyce, then professor of Apiculture at Guelph University and later Professor of Apiculture at Cornell University, developed the first practical process

for making a granulated honey in 1928. Dyce later patented the process and in Canada gave the patent rights to the Province of Ontario. In the United States the rights were given to Cornell University. Much of the money earned in the United States was invested and the income is still used to support research on bees and honey at Cornell. The patent has now expired and anyone may manufacture and market the product.

Some Facts About Granulation And Fermentation

When Dyce began his studies there was little known about honey granulation and fermentation. He was aware that all natural honeys contain yeast. When the moisture content of the honey is somewhat above 19 percent, these yeast cells grow, producing carbon dioxide and alcohol. The yeasts found in honey are not the same as those used to make alcoholic beverages or bread but belong to the genus *zygosaccharomyces*. However, carbon dioxide may be produced in such quantity in fermenting honey as to burst the drums or containers in which the honey is packed. The foul odor produced by fermentation makes the honey unmarketable. If it is not damaged too badly it may be used as bee food.

When honey granulates a small amount of the water in honey is taken into the sugar crystals. However, the quantity of water so contained is not proportional to the amount of water in the honey. Thus one may have a jar, drum or container of partially crystallized honey in which the liquid fraction has a moisture content higher than that of the original honey. When this occurs the honey may ferment. Dyce recognized that if he was to control the granulation of honey he must first pasteurize the product. Any seed crystals he added must also be made from honey, which had been pasteurized.

Dyce found that the optimum temperature for honey granulation is 57' F. There has been much conflict about this question in the literature. Many people were of the opinion that a fluctuating temperature speeded up granulation; Dyce showed this was not true. Most granulated honeys will have a firm texture six to 14 days after the introduction of seed crystals if held at the proper temperature. In commercial practice rooms used for holding honey the process of crystallizing are held within 10'F. of the optimum temperature.

Pasteurization of honey destroys the nuclei on which crystals might grow. Dyce found he could introduce previously granulated honey, that which had been ground and the crystals broken, into honey to be crystallized.

These crystals are called starters. When five percent of a ground, finely granulated honey was introduced into newly pasteurized honey there is a sufficient quantity of seed to produce a high quality, finely crystallized honey. In commercial practice most firms use eight to ten percent starter; under ideal conditions less may be used. An important factor is that the seed crystals must not be warmed too long and thereby caused to melt partially.

Dyce processed honey

Dark, strong flavored honeys have a lighter color and milder flavor when made into a finely granulated honey; this fact has led some packers to use less than desirable honey in making granulated honey. Honeys used to make granulated honey should be of table quality. The optimum moisture content is 17 ½ to 18 percent; in the northern states 18 percent in winter and 17 ½ percent in summer; in the southern states 17 ½ percent is used throughout the year. The moisture content of a crystallized honey has a great effect on its hardness and therefore its spreadability. Honeys which have a higher or lower moisture content will be too

hard or too soft and will not spread properly when spread at room temperature. The first step then is the selection and blending of honeys of proper color and moisture contents.

Honeys to be processed by the Dyce process need not be filtered. In fact, filtering removes certain of the natural elements present in honey, especially pollen. The honey should be heated to about 125°F at which temperature it should be carefully strained. Dyce recommended the honey next be rapidly heated to 150°F and then cooled rapidly. This temperature is sufficiently high to kill the yeast present. Prof. G.F. Townsend of Guelph University showed that yeasts in honey were killed if it was held at 160°F for one minute or 140°F for 30 minutes or some equivalent combination of time and temperature between these two extremes. In commercial practice there is time involved between heating and cooling the honey, which also has an effect on yeasts. If the honey in a bulk tank is heated to 150°F and then cooled, even under optimum conditions, it will have heated enough to kill any yeast cells present.

The Starter Crystals

For a starter one uses granulated honey, which has been previously made by the Dyce process. It is not satisfactory to take previously granulated honey from the grocer's shelf to be used as seed since the high temperature at which this honey is held in a store will have started to melt the crystal nuclei present. One method of obtaining a yeast-free, finely granulated honey to use as a starter is to grind with a mortar and pestle a small amount of coarsely crystallized honey that had been heated (pasteurized) previously. The honey must be ground very finely and preferably at a temperature in the vicinity of 57°F as the crystals may melt at higher temperatures. The honey into which the crystal nuclei are introduced must also be cooled before the starter is added. Most of the grinders used for starter for Dyce crystallized honey are homemade or modifications of meat or food grinders on the market.

Air and Crystallized Honey

Honey which is in the process of granulating and which is held at lower than room temperatures is viscous. Often a number of air bubbles are incorporated into it in the process of cooling and/or adding the seed. These small air bubbles may rise to the surface of the product and give it a white frothy appearance. This white froth may be avoided by allowing the honey to settle a few hours before it is packed, or packing and cooling the honey rapidly so the air bubbles are incorporated into the final product. The air has no objectionable effect on the flavor.

Granulated honey in glass may pull away from the glass. The honey may assume a white froth-like appearance between the honey and the inside of the glass. Customers usually do not realize what has happened and may think the honey has spoiled or become moldy. (Mold cannot grow on or in honey.) It is for this reason that granulated honey is usually packed in tubs or glass jars with labels that wrap completely around the container.

Stack Heat

The seed crystals are usually added to the cooling honey when the temperature has reached about 75°F. It is very difficult to force honey to flow at lower temperatures. This temperature is higher than desired but if it is not held too long

little damage is done. However, when cases of newly packed, crystallized honey are placed on pallets or trucks the cases must be carefully spaced so that air can flow between and around the cases. If this is not done the stack of newly packed jars will retain heat. This heat could have an adverse effect on seed crystals and cause them to be less effective as crystal nuclei.

Shelf Life

Properly made granulated honey has a long shelf life, longer than most liquid honey. Honey packers have observed that they may make and hold granulated honey for long periods of time, much longer than they would have stored packed, liquid honey. Granulated honey made and held under controlled conditions retains its fine texture, color, appearance and taste. There is probably a wider market for honey in this form than is now being exploited.

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Late Summer-Fall Management

Modified from BC Apiary Branch "Bee Notes #408"

Autumn management will have a direct effect on the amount of stores available and the population of the hives next spring. Do not remove capped frames of honey from the second brood chamber, since in doing this you tend to destroy the placement of honey and pollen which the bees have stored in their preparation for winter.

Early removal of surplus honey above the second brood chamber is good practice since it enables the beekeeper to...

1. extract honey when weather is still warm, the honey is easier to handle and still liquid, and robbing has not started;
2. inspect the hive for:
 - a) diseases and pests
 - b) queen quality
 - c) requeening
 - d) winter stores,
3. apply the necessary medicines for the prevention and control of diseases and pests. This is particularly important for mites as most control products are effective only during relatively warm weather,
4. feed additional syrup while it is still warm enough for bees to evaporate the moisture and invert the sucrose sugar to invert sugars which bees use,
5. and the bees to store any late honey and prepare their brood nests for winter.

Robbing

One of the most serious and least understood beekeeping problems is that of robbing. When bees are robbing you will notice many bees attracted to your place of extraction, equipment storage area, or to any exposed honey or combs. Robbing is particularly acute during periods when there is a dearth of nectar, as in May and possibly early June and again in late summer. At such times bees will turn their attention to robbing any available source of honey or sweet. Careless handling or spilling of sugar will also start robbing. When robbing is in full swing, the colonies become almost frantic to obtain some of the honey or sweet which is available. In their frenzy, strong colonies will sometimes attack and destroy weak colonies; after which they will remove the honey from the vanquished colony to their own. Since disease-causing organisms may be in the hives, combs, or cappings from which the bees are robbing, every precaution must be taken to prevent robbing to avoid the spread of diseases and pests including mites. Robbing can be so severe that beekeepers can be prevented from normal hive

management such as honey removal and disease checks. Requeening while bees are robbing is often unsuccessful. Robbing bees can also present a real hazard to the public as stinging increases, sometime great distances from the hives.

To Control Robbing:

- Never leave any honey, cappings, wet combs, or dead hives exposed to foraging bees;
- If robbing starts, take away the material attracting the bees or close the hive if hive examination is in progress. Reduce hive entrances. Grass placed over the hive entrances will help prevent robber bees from gaining access to weak colonies.
- When hives have died, close up the entrance, or better still, sort the combs and store the equipment in a bee-tight building.
- Work hives when bees are not flying such as early morning or late evening.

Protecting Hives from Wasps

Wasps will sometimes attack, and eventually destroy, a colony. The way to protect a colony once the attack has started is to move it to another bee yard. Sometimes a hive may be protected by reducing the entrance to $\frac{3}{4}$ inch or even smaller. If weather is warm, screen should used to reduce the entrance. An idea is to use galvanized window screen. Cut a strip 2-3 inches wide and a little longer than the hive entrance. Bend the width (long ways) into a *U* - don't fold. Tuck this in the entrance, curving it a bit to give an entrance at one side. Be suspicious of any hive that is being attacked by wasps. This often indicates that there is another problem such as queenlessness or disease. Strong, healthy, queenright colonies are seldom overcome by wasps.

Getting Bees and Honey Into the Two Brood Chambers for Winter

After surplus honey is removed, there is often a super of combs remaining on the hive which contains bits of honey and some bees. For some, this constitutes a problem. To overcome this, place an inner cover over the two brood chambers. The cover must have a small central opening. Place the super with bits of honey and some bees over this cover. Some people separate the inner cover and the super by an empty hive body (i.e. a super with no combs) . Remove any cappings over the honey by scratching. With a fork or capping scratcher. Bees will come up from below removing the honey. The bees in the super will join the cluster below. Make sure all external hive parts fit tight so as to exclude robbing bees. Alternately, the bees can be shaken or brushed off in front of the hive and the super with bits of honey can be stored until the following spring.

Requeening and Feeding

Colonies may be requeened with young laying queens following the removal of honey. Requeening should be accompanied with the feeding of sugar syrup. Do not spill syrup as this may initiate robbing. Reduce hive entrances drastically, using screen if weather is warm. Check hives for wintering requirements and select those hives suitable for wintering. Do not attempt to winter weak hives; hives that are queenless; have a poor queen; or one that has little or no pollen. A hive requires 50 - 80 pounds of honey (depending on area) and pollen equal to

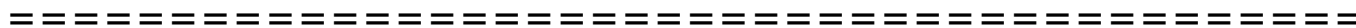
two combs filled on both sides with pollen. Honey stores, if insufficient, may be supplemented with sugar syrup. Mix two parts sugar to one part hot water. Pour sugar into hot water. Feeding should begin early enough to finish feeding by late September. Feeding too late prevents bees from inverting the sugars, evaporating the moisture, and properly storing and capping the material. Fumagillin can be fed in syrup for Nosema prevention.

Mite Control

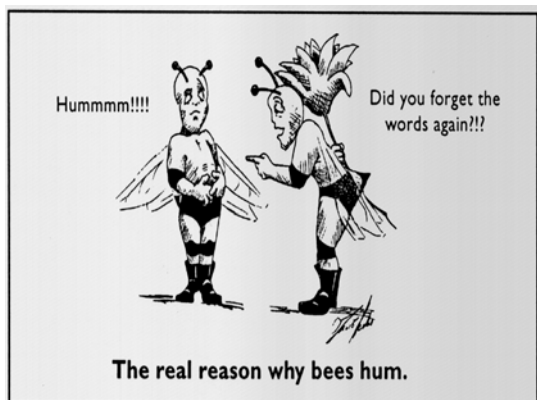
Most mite control products require relatively warm temperatures to be effective and should start in mid August to be completely successful. a treatment period of 2 to 6 weeks. Monitor for mites before starting treatments. Unnecessary treatment is expensive and can result in the development of mites resistant to miticides.

Handling and Storing Combs Over winter

- 1) Sort over all combs before storing and separate light-colored and dark-colored combs into two groups.
- 2) Prevent costly mouse damage by stacking supers onto a inverted cover. On top, place another tight-fitting cover.
- 3) Take precautions against wax moths.



Bee sounds



There are many sounds we can hear in a bee hive, do bees hear them too? Bees lack ears or other sound-capturing structures but they do hear! Bees communicate with sounds both in queen rearing and in dance language communication.

In swarming and supersedure, "piping" is a high-pitched sound produced by queen muscle contractions without unfolding of the wings. The thorax vibrates faster with wings folded than when unfolded so the sound is not the usual bee "buzz" but a high pitched "piping" sound.

The queen, as she pipes, presses her thorax against the beeswax comb. Adult queens pipe on or close to the queen cell of developing queens. Worker bees pick up the sound, probably via vibrations, and may be observed to stop or freeze movements in the vicinity of queen piping. The adult queen pipes for a two-second pulse followed by a series of quarter-second toots. If there are virgin queens within queen cells, they respond with a series of ten short pulses.

Piping is more frequently heard in swarming than in supersedure behavior and is more commonly heard after the primary swarm leaves. We do not know what precise role it plays but it is believed piping may help time swarm departure, particularly for afterswarms. Also, it may help the virgin queen locate her potential rivals so she can eliminate them.

The ordinary buzzing sound made by bees when flying may or may not be perceived by bees. If we hold a worker bee in our fingers she too will make a high pitched sound somewhat similar to queen piping. Worker bees will also emit this sound in the hive-perhaps as a warning or alarm sound.

Sound production is vital in dance language communication behavior. Worker bees must precisely time the length of wagging since it encodes the distance to food source portion of the message. The unique noise of the "breaking" dance, signaling swarm departure, may also be a sound the bees can hear. The perception of substrate "noise" may be via touch receptors rather than airborne sound wave perception. Beekeepers know that jolts and vibrations to the hive serve to alert a bee colony and may result in more stings during colony inspections. The ordinary background hum of bees may likewise be a touch stimulus transmitted through the beeswax comb.



Recipe Corner

Honey Butter

In small bowl, cream $\frac{1}{2}$ cup butter until soft. Slowly beat in $\frac{1}{4}$ cup honey; beat on high speed until light. It's pretty amazing on pancakes or French toast!

Honey Cream Cheese

In a small bowl, cream 1 8-oz pkg. cream cheese until soft then gradually beat in $\frac{1}{4}$ cup honey.

Orange Honey Cream Cheese

In a small bowl, cream 1 8-oz pkg. cream cheese until soft. Gradually beat in $\frac{1}{4}$ cup honey, 2 tablespoons orange juice, and $\frac{1}{2}$ teaspoon grated orange peel.

Blend well all ingredients! This can be kept chilled overnight. If not making it for a bee meeting, try it for breakfast on rolls, muffins or a croissant.

2007 Washington State Beekeepers Association Fall Conference

October 18, 19 & 20, 2007

Sun Mountain Lodge

Winthrop, WA

For Schedule, Speakers and Topics go to www.wasba.org

2007 Oregon State Beekeepers Association Fall Conference

November 1-3

Newport, Oregon

For more information go to www.orsba.org

This is **not** a bee.

Known as a drone fly (*Eristalis*), this bee-mimic closely resembles the honey bee (*Apis mellifera*) seen in the photograph at right. Drone flies not only look like bees, they behave like them too—feeding on flower nectar and pollen and buzzing and hovering like bees. Look closely, though, and you will notice that like other flies, the drone fly has two wings. Bees have four (two pairs).

Photographs courtesy of Robert Moul



Honey bee (*Apis mellifera*)

