

# Buzzword

West Sound Beekeepers Association [www.westsoundbees.org](http://www.westsoundbees.org) Volume X Issue X August 2007

Editor -Basil Gunther 360 297 5075

## ANNUAL SUMMER PICNIC

**WHEN: SATURDAY,  
AUGUST 18, 2007**

**WHERE: STEDMANS**

**TIME: 2 PM**

**PORK,CHICKEN,HOTDOGS,  
HAMBURGERS AND SOFT  
DRINKS SUPPLIED.**

**BRING YOUR OWN BEER,WINE  
PAPER PLATES,KNIVES,FORKS  
SPOONS,NAPKINS AND CUPS  
AND SOMETHING TO SHARE**

**CALL BARBARA STEDMAN TO  
CONFIRM YOUR ATTENDANCE.**

**EVERYONE INVITED, PAST,  
CURRENT MEMBERSS, AND BEE  
LOVER FRIENDS**

**Next Regular meeting  
September 18, 2007**

### **INSIDE THIS ISSUE:**

	Page#
Minutes	2
Presidents Message	2
Nucleous Colonies	3
Genetic Diversity	5
Long live the Queen	6
Wintering nucs	7
Romonov Nucs	10

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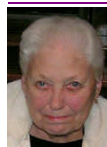
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**This Meeting's Refreshments:**

**Drinks: Basil Gunther  
Snacks: Roy Barton**

# Minutes from the July 17<sup>th</sup> 2007 meeting:

*Submitted by Judy Jennings*

**George Purkett presided at the meeting.**

**Minutes for the June meeting were approved.**

## **Treasurer's Report:**

Checking: \$ 1722.00

Savings: \$ 3055.00

Members: over 60 paid memberships

## **Old Business:**

- More beekeepers are needed to help inspect maintain the Apiary. No experience necessary –Call George.

## **New Business:**

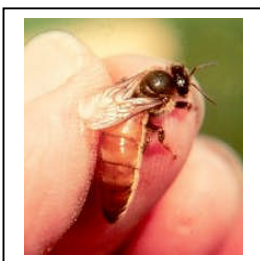
- It was decided to have the picnic on Saturday, August 18<sup>th</sup> at the Stedmans. Potluck. Al and Barbara supplying barbequed meats! A honey taste-off will be at the picnic.
- George has the new club extractor. Call him if you want to use it.

## **At The Meeting:**

- Guest speaker Jo Miller gave an amazing presentation on bee diseases.
- Stan Jorgensen showed pictures of swarms that fly right to his yard and put themselves in his bee boxes.
- Discussion on the uses of pollen (for people) and pollen traps
- 

## ***Message From The President:***

After last month's presentation on diseases and pests, I hope you all have had an enjoyable time searching every comb in you hives to find perfect health below the tower of full honey supers. I hope I can remember enough of the details from the presentation to recognize what I find during hive inspections. The statement that sticks with me the most was the comment that some beekeepers have been first year beekeeper for about 20 years. I hope I do not resemble that description. In some aspects of beekeeping, I imagine we all do. Sometimes we may even recognize it ourselves. I know I keep learning new things at the meetings, in the newsletter, and from members.



The most important thing to do for your bees this month is to attend the bee association picnic for a chance to win the beekeeping jacket. I am sure you will earn much more respect from your bees in a new beekeeping jacket. I guess you could remove excess honey from the hives, inspect, move to better pasture, requeen, combine, feed, medicate, enjoy, teach bees to perform tricks, try experiments or whatever...but none of these would be as good as going to the picnic.

**I had a moment the other day in the apiary that I would like to share. I had made a nuc hive of 4 frames the previous day and as I opened it, the queenless bees were very agitated, moving around and humming very loudly. The sound tended toward a roar as I shuffled the frames about a bit. Then at the exact moment of placing a queen cell and the attached beard of bees into the nuc, the bees in the nuc suddenly stopped moving, went silent, and were at peace with the world, as if the tranquillity switch had been flipped.**

**Please find me at the picnic and volunteer yourself or someone else to give a presentation at the September meeting. I will let you know if you have been volunteered...Better to volunteer yourself and choose your topic than be volunteered for someone else's topic.**

**Queens, Queens, Queens  
Queens for a pence  
If you want them alive  
There'll be more expense**

**There once was a bee from Nantucket...never mind.**

**George  
Supreme Drone**

## **NUCLEUS COLONIES**

**N.J. Gates**

**Nucs, nucleus colonies, divides, splits etc. Whatever you call them they are basically the same thing, new small colonies produced from large established ones. Nucs are commonly produced to increase colony numbers, create two-queen colonies, mate queens, replace winterkills, control swarming, re-queen old colonies or for sale. Spring and summer are a good time to produce them.**

**Beekeepers, whether hobbyist or commercial should consider maintaining a certain number of nucs throughout the year for emergencies. A colony that is queenless, slow in building up or obviously going downhill can be brought back to production strength quickly by uniting a nuc to it. Adding a nuc gives a failing colony not only a new queen but also several thousand adult bees and brood. By contrast, adding only a new queen to the colony may save it for future years but may not increase its strength enough to be a producing unit in the current season.**

**Re-queening, using a nuc is easy and more successful, on average, than when queens are introduced alone. The adult population of the nuc will protect and care for its queen and act as a filter slowing the old colony bees' contact with the queen. When re-queening, find the old colony queen and remove her first. You can then unite the nuc to the colony a couple of different ways. One way is to place the nuc combs in the center of an empty standard brood chamber box, filling any empty space on either side of the nuc combs with combs containing honey and pollen or empties. Place a couple of sheets of newspaper over the top of the**

**top brood chamber of the old colony. Slit the paper in several places with your hive tool and put the box containing the nuc on top. Bees from both the old and nuc colonies will gradually mingle as they remove the paper. Another method is to remove sufficient combs from the top brood chamber of the old colony to accommodate the nuc combs. Smoke the nuc and the old colony thoroughly and place the nuc combs into the old colony. It's a good idea to make sure the queen is in the center of the nuc before uniting. Instead of smoke, some beekeepers spray both colonies with sugar syrup or make an envelope of newspaper in the area the nuc will be placed to temporarily separate the nuc from the big colony.**

**Nuc making is quite simple. Depending on your needs the nuc may consist of from 2-5 combs or more. Beekeepers usually make small nucs consisting of 2-3 frames of brood and 1-2 frames of honey to maintain queens for emergencies. The hardest part of nuc making for most beekeepers is finding the old queens. A couple of tricks should help you. Separate the brood chambers of colonies to be nuked with queen excluders. Four or five days later when making the nucs the queens will be located in the brood chambers where eggs are present.**

**You can make nucs very quickly without finding the old queens by the following method: From the top brood box of the parent colony remove the required number of combs of brood and honey. Quickly look at each frame for the queen. If you don't see her then gently shake all the bees off the frames into the empty space in the top brood box. Place the shaken frames into an empty box and set it to one side. If it is early in the season and still cool, push the remaining frames of brood in the top box of the parent colony together into the center of the box and add empties to the outside to fill the space. If it is warmer fill the center with the empties. Place a queen excluder on top of that box and on top of that place the box with the shaken frames. In a matter of minutes, bees from the parent colony will move through the excluder to cover the brood. If you have your equipment ready and organized it takes less time to do the manipulations than it does to write the instructions. A single operator can do 50-100 in one day. By the time you have shaken each colony in a yard of 20 or more hives you can usually go back and start to remove the nucs. above the excluders. Come back the next day if the bees are slow.**

**Move the nucs into special nuc boxes or simply house them in standard boxes filling the empty spaces with combs. Screen the entrances so that bees can't escape and move the nucs to a new yard far enough away from the parent yard that the nuc bees will not return to their hives. Two miles away is usually enough. Open the entrances wide enough for ventilation but small enough to keep the nuc warm and to allow the nuc bees to protect their new home. An inch or two is enough for a 3 - 5-frame nuc. The next day you can introduce new queens or queen cells. Feed the nucs as necessary. These small units may not be able to gather enough food for themselves in marginal weather. Splitting is stressful so add medication for Nosema disease.**

**You can combine bees from several hives when making nucs if you don't want to weaken your parent colonies very much or if you want to make very large new colonies. The bees will be so disorganized that they usually will not fight. If you want to be sure, smoke them well as you place them in the nucs or spray them with sugar syrup.**

**Nucs can be a profitable and enjoyable addition to your management scheme. Try making a few this year.**



*Worker*

*honeybees construct a new comb, an important part of colony founding. Colonies of promiscuous queens tend to be far more successful in such chores and in surviving their first winter than colonies produced by monogamous queens, report Cornell researchers Tom Seeley and Heather Mattila in Science magazine. (Credit: Heather R. Mattila)*

## **Genetic Diversity In Honeybee Colonies Boosts Productivity**

**Why do queen honeybees mate with dozens of males? Does their extreme promiscuity, perhaps, serve a purpose?**

**An answer to this age-old mystery is proposed in the July 20 issue of Science magazine by Cornell**

**scientists: Promiscuous queens, they suggest, produce genetically diverse colonies that are far more productive and hardy than genetically uniform colonies produced by monogamous queens.**

**"An intriguing trait of honeybee species worldwide is that each honeybee queen mates with an extraordinarily high number of males," said Heather R. Mattila, a Cornell postdoctoral fellow in neurobiology and behavior and co-author of the article with Thomas D. Seeley, Cornell professor of neurobiology and behavior.**

**In every honeybee species, say the researchers, queens mate with multiple males. The European honeybee -- the common species in North America -- mates with from six to 20 mates on average, for example, while the giant honeybee in Asia has a reported record of 102 mates.**

**To study the reasons for honeybees' promiscuity, the Cornell biologists inseminated 12 queens with sperm from 15 drones (a different set for each) and nine additional queens with sperm from a single drone (but a different one in each case). They then prompted the hives to swarm in early June to form new colonies.**

**"After only two weeks of building new nests, the genetically diverse colonies constructed 30 percent more comb, stored 39 percent more food and maintained foraging levels that were 27 to 78 percent higher than genetically uniform colonies," said Mattila.**

**By the end of the summer, the genetically diverse colonies had five times more bees, eight times more reproductive males and heavier average body weights, mostly because of larger amounts of stored food.**

**By winter's end, 25 percent of the genetically diverse colonies survived to their one-year anniversary (only about 20 percent of new honeybee colonies make it that long in upstate New York). But all of the genetically uniform hives starved to death.**

**"These differences are noteworthy considering colonies had similarly sized worker populations when they were first formed," said Mattila. "Undoubtedly, our results reveal enormous benefits of genetic diversity for the productivity of honeybee colonies."**

**For example, the researchers found that bees in the genetically diverse colonies used sophisticated mechanisms for communication, including waggle dancing, more often than bees in genetically uniform colonies to discover food sources and direct nest mates to food. Because there was more information available among nest mates about food discoveries, the diverse colonies gained far more weight than did genetically uniform colonies.**

*Note: This story has been adapted from a news release issued by Cornell University. July 20, 2007*

## **Long Live The Queen!**

**The queen honey bee is genetically identical to the workers in her hive, but she lives 10 times longer and – unlike her sterile sisters – remains reproductively viable throughout life. A study from the University of Illinois sheds new light on the molecular mechanisms that account for this divergence. The research centers on the interplay of three factors known to have a role in reproduction, growth and/or longevity. The first, vitellogenin (Vg), is a yolk protein important to reproduction but which also has been found to contribute to longevity in worker bees. The second, juvenile hormone, contributes to growth and maturation. The third, an insulin-IGF-1 signaling pathway, regulates aging, fertility and other important biological processes in invertebrates and vertebrates.**

**The study explores these factors in queen honey bees. How, the researchers wanted to know, could the queen achieve such a long life compared with her sisters while also devoting so much energy to reproduction?**

**"Many times the way organisms achieve longevity is via a tradeoff with reproduction," said entomology professor Gene Robinson, principal investigator on the study. "In general, life forms that postpone reproduction until later in life live longer. But the queen bee has her cake and eats it too. She's an egg-laying machine. She lays 2,000 eggs a day and yet lives 10 times longer than individuals that stem from the same genome and yet do not reproduce."**

**The researchers knew from studies of the fruit fly and nematode that the insulin-signaling pathway had a role in longevity. Down-regulation of insulin-IGF-1 signaling (IIS) in those species was associated with increases in longevity– but at the expense of fertility. They also knew that manipulating fat body cells in the head of the fruit fly influenced longevity. Because Vg is synthesized in fat body cells in honey bees, the team decided to look at Vg expression in the head and thorax as well as the abdomen. This led to an important discovery. Expression of Vg was high in the abdomen in the young queen and declined over time, but increased with age in the head and thorax. Old queens showed much higher Vg expression than young queens.**

**Worker bees had much lower levels of Vg expression than queens, and Vg in worker heads was also low compared with queens. Previous studies in workers**

had shown that Vg reduced oxidative stress in honey bees by scavenging free radicals that can lead to aging or illness. Not surprisingly, queens were more resistant to oxidative stress than workers.

Whether this is the actual mechanism by which queens achieve both fertility and long life remains to be seen, Robinson said. In any event, this study suggests that vitellogenin plays a vital role in queen bee longevity, he said, particularly since the honey bee lacks many antioxidants commonly found in other species.

"There are implications here (for other species) in the sense that here is an organism that is reproductively active and long-lived," said Robinson, who is also affiliated with the Institute for Genomic Biology. "And we see novel and conserved factors that are part of a large regulatory network. The queen has her cake and eats it too. And humans want to know how that works."

*Note: This story has been adapted from a news release issued by University of Illinois at Urbana-Champaign May 9, 2007*

## Wintering nucs

To overwinter nucleus colonies successfully you must make sure all the basic requirements for full size colonies are looked after. In other words the colonies must be disease free, treated to control mites, should have adequate good quality feed, be populated by healthy young bees and be headed by young prolific queens of winter hardy stock. In addition these units must have extra winter protection.

When fall feeding thick syrup add fumigillin for nosema control. Nosema is a stress related disease that nucs are susceptible to because of their small size. Nosema also compounds the effects of mites. The combination is a real nuc killer. Any syrup feeding should be done in September to give the bees time to properly ripen and store it under wax. Improperly cured stores will ferment and may cause problems with dysentery.

When I began to experiment with nuc overwintering I had trouble consistently getting anything less than about 8 frames of bees through winter. Now, even 3 frame nucs seem to be no problem. Although I have refined the process over the years I believe that a lot of the success is due to using winter hardy stock developed for this area. Since I have been selecting for winter hardiness (colonies that come through winter with relatively large populations and plenty of unused stores) my success has increased. If you want to winter nucs you should consider producing your own selected stock. If not you should at least buy queens with stock of proven wintering ability, preferably from a local producer. Young bees are crucial for overwintering. Old bees worn out by summer foraging will not survive the winter. In this region, nucs confined to a small area like a 4 or 5 frame nuc box often plug out with honey in the latter part of the season. This leaves little egg laying room for the queen resulting in an inadequate population of young bees for winter, although the population over all may look good because of the presence of old summer bees.

**When producing 4 or 5 frame nucs to winter I used to try to make them up some time in the summer with just enough bees and brood to develop into units that would completely fill their boxes with young bees but also enough stores (at least 3 full frames for winter). I found that to be very difficult, varying tremendously with the season. Now I start my nucs out in standard deep boxes divided in two, making 2 four or 5 frame compartments. As the season progresses, if the nucs look as though they will outgrow their spaces I transfer them to full-size standard boxes on standard bottoms or special inner covers with entrances used as bottoms. This provides the queens with plenty of room for egg laying to produce lots of winter bees, at the same time allowing lots of space for stores. I don't necessarily fill the boxes with frames, just giving them what they need including a frame feeder. Most of these nucs grow to cover 6 frames. Some surprise me by developing into a full box of bees. In a four or five frame compartment they would have filled their boxes and stagnated.**

**If I have made some of the units so small that they just fill their compartments in the split boxes by the end of the season that's fine. I leave them where they are. They are a problem to feed though if I can't get a frame feeder in. Then I use special inner covers to keep the nucs separate but with 2 feed holes. If I were to build the nuc boxes again I would build frame feeders that also function as moveable dividers separating one nuc from another in the standard deep box while at the same time allowing both nucs access to syrup. This design is described by Kirk Webster and has also been used successfully for years in Kelowna by Bill Ruzicka. When the nucs outgrow their compartments, one can be moved out to another box while the other can remain where it is with the feeder moved over and extra combs added.**

**For winter protection I place the nucs that are in full-size boxes on top of large (2 deep boxes) hives, separated from the colonies below by modified inner covers that have no feed hole and a rim on both sides of the plywood with a swivel entrance in one rim. These are the inner covers sometimes used as bottom boards. The rims allow bee space over the top bars of the hives below and beneath the bottom bars of the nucs above. The solid, thin plywood prevents stale moist air from rising into the nuc above but still allows heat to transfer from below. The bottoms of the double compartment nuc boxes are constructed exactly the same but are fastened permanently to the boxes. All of the nucs are provided with upper entrances but no lower ones. My hives are kept 4 to a pallet, two facing east and two west. For winter they are shoved together so that the boxes touch and the nucs are placed on top, also facing east and west. If the nuc colonies only cover 6 or 7 frames I slide them over to the side of their box which touches their neighbour's box. The frame feeder is then moved against the outside frame of bees leaving an unoccupied space in the box. In the spring I then have room to add frames of honey if necessary. Each nuc is topped by a piece of carpeting with 1 inch blue styrofoam above. I wrap the whole grouping with black building paper around the perimeter, folded over the top like a parcel. The whole thing is topped with a sheet of plywood or tarpaper held down by a couple of lids. I cut holes in the tarpaper opposite the upper entrance auger holes in the nucs and big colonies below. Everything is then warm, and waterproof. Years ago in trials we found that the big colonies didn't necessarily benefit from the wrapping but the nucs definitely did, consuming less feed and losing fewer bees. Since the colonies below can't easily be inspected or fed in late winter or early spring I make sure they are well fed in the fall so that no early feeding is necessary. I find that makes for better survival anyway because in previous years I sometimes relied on late winter feeding but lost some colonies to starvation.**

**Usually the nucs go on top of the hives in late October or early November. By then there is little bee flight, so even if the nucs were already located in the same yard there is no problem with drifting. But drifting can be a real problem in spring. No**



matter how well marked the boxes and entrances, I find an unacceptable amount of drifting occurs between nucs and big hives after the bees are flying regularly. This results in some huge hives and almost beeless nucs or sometimes the other way around. To avoid drifting I remove the nucs usually in late March placing them on top of old junk empty boxes to keep them off the cold ground. Although the nucs would benefit from the warmth of the colonies below this is more than offset by the drifting problem. I don't think it would be as much of a problem if my hives were kept 2 to a pallet with the nuc entrances facing the back of the hives.

In late winter/early spring I check a few nucs in each yard. To do this I remove the outer top covering then slit the building paper with an exacto knife in a line even with the top of the insulation. I discard the paper that was wrapped over the top. Any nucs that need feeding get frames of honey I have saved from the previous season. I scrape off some of the cappings and position them against the outside of the cluster. One beekeeper I know feeds extracted, granulated honey to his nucs. I don't like to feed syrup to nucs (particularly small ones) too early in the spring because I think it stresses them unduly.

Well that's about it for wintering nucs. If this article has you interested but you find yourself nucless you may still have time to make up a few to try, but first see if you can find some winter hardy young mated queens. Break apart a hive that still has large frames of brood and make up nucs that consist of at least 2 big frames of brood, three full frames of honey and 4 frames in total completely covered with bees and the young queen. If you can't find the proper ingredients wait till next year. Good luck!

**REMEMBER**  
**THE ANNUAL**  
**PICNIC**  
**AUGUST 18**  
**HONEY TASTING CONTEST AND RAFFLE**

# Romanov Nucs

Boris Romanov

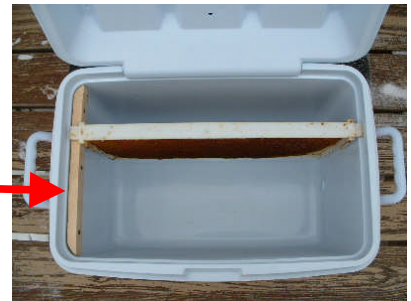


In 2003, I decided to modify standard coolers and use them as nucs. This option offers a cheaper and sturdier nuc that are already painted.

**More importantly, bees have grown fond of my idea: within three weeks colonies of bees doubled in size.**

**Editor's note: Albertson's is selling suitable coolers for 16.99 (some have a mail-in rebate for a magazine subscription or 9.99 cash back!)**

**You should screw a wooden bar to the cooler to fit standard-size frames**



**You should unscrew and remove the plastic cap. This hole will act as an entrance/ventilation opening.**

**Also, you can drill an additional 3/4" entrance/ventilation hole above (beneath) the cooler handle located on the same side.**

**Now you can use the modified coolers as 5-7 frame nucs. Moreover, you can utilize these nucs to store empty or honey-filled frames.**



**To create further protection from the rain, you should place a piece of painted plywood on top of the cooler and secure it with a brick or a stone.**

**To feed bees you can use a Division Board Feeder for \$3.95**

