



Buzzword



West Sound Beekeepers Association

Editor:--Basil Gunther 360 297-5075

Volume XI Issue III January 2008

January 16. 2008 Meeting

7:00P.M.
Stedman's Bee Supplies
Silverdale, WA

Next meeting February 20, 2008

Program

6 PM "Bee-ginner" Class
7 PM Program/Meeting
8:30? Queen Rearing Group ?

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Time to pay dues!
Please send, (or bring to the meeting), \$24 payable to West Sound Beekeepers Association
c/o Dennis Heeney,
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Bainbridge Island,
WA 98110

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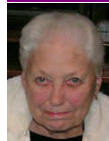
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Educational Materials

Barbara Stedman



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Education Chair

Paul Lundy



(360) 297 6743

Queen Rearing Group Leader

Maya Bewig



(360) 379-5564

This Meeting's Refreshments:

Drinks: David Mackovjak

Snacks: Ellen Hough

Message From the President:



Thanks to all who participated in the auction during the December dinner party. To those unable to attend: perhaps next December you can join the fun. I am sure I could have won the honey taste off if I could have only remembered to bring the jar from home...well almost sure of it. Thanks to Judy and Basil for running the auction and bringing all of the Bee-movie items. Thanks to Dennis for handling the financial affairs at the end.

While my bees have been shivering out in their hives, I have been huddled up reading about what I should have done last year and will probably forget to do this year. I do not know how many in our queen-rearing group have read the book 'Beekeeping at Buckfast Abbey'; it is part of our Association Library and is available for checkout. I have been reading it and was very surprised by one aspect. The Abbey would rear their queens and introduce them into nucleus hives. The queens would be kept in the nucleus hives over winter and then be introduced into production hives in the spring. They did not introduce the queens into a production hive in the year the queen was raised. There was a note that if during the fall hive checks there were no queens left over from the previous year, they would use a current year queen. There is also mention that they would have to remove excess population from these nucleus hives through the season. There is a description and photo of the hive used to over winter the nucleus. It is essentially a deep box that has been quartered and modified to hold 16 frames that are 1/2 the width of normal frames but are the full depth of a deep frame. So 4 nuclei are kept in a single deep box. I need to finish reading this book, as I must return it to the library at the next meeting or face the wrath of Roy. This is a book I will need to read a couple of times since there is too much information to remember from one reading.

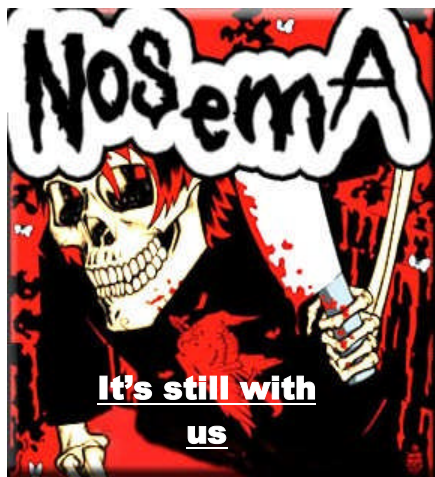
But as it is not time to raise queens, I have been off reading another book 'Bees and their Keepers'. It is a narrative of beekeeping written from a biologist's perspective. It is an interesting look at the inner workings of the hive, of the bee's activities within, and of the external subservient keeper. There are also a lot of historical references as to whom, when and how certain knowledge has been found out. I liked the chapter 'How to tell a bee from the keeper'. Sorry, I can't put a short synopsis here. If you want to know, you will have to read the book. See you at the meeting.

George,

And rather than a poem, I will quote this phrase attributed to 'Cheape and Good Husbandry by Gervase Markham in 1614:

"It is a creature gentle and loving and familiar about the man which been ordering of them, so he come neate, sweet and cleanly among them; otherwise if bee have strong and ill smelling savours about him, they are curst and malicious, and will sting spitefully."

Meeting Minutes: None, Annual Holiday party



By Brian Gant

Posted Wednesday, February 4, 2004 BBKA News

We do not hear as much about nosema as we did when I started beekeeping; varroa has taken over the attention of beekeepers but that does not mean that nosema has gone away, or that our bees have developed an immunity. What has been called the 'spring dwindling disease' is indeed still with our bees, and quite possibly with its effects made worse by the arrival of the more recent problem.

Outside of the bee, on the combs or on any part of the hive, nosema exists as a long-lived spore; sausage or rice-grain shaped some 4 to 6µm long and 2 to 4µm wide. They are easy to see with a x400 optical microscope. Inside the spore, coiled into a neat helix, is a 'polar filament', a tube almost half a millimetre long!

Worker bees take in the spores when they are cleaning up inside the hive, particularly when cleaning faecal droppings left by bees who were unable to get outside during the winter months. When the spores reach the bee's ventriculus (between the honey crop and the small intestine) each spore germinates, shooting out its long polar filament. The ventriculus is lined with epithelial cells whose function is to produce the digestive enzymes, which enable the bee to digest the pollen in its diet. If that remarkably long filament from the nosema spore is able to reach one of these epithelial cells then that cell is doomed.

Through the long tube travels a minute sporoplasm into the cell, which it takes over and sets about reproducing nosema spores instead of enzymes. When the cell eventually bursts it releases many more spores, which repeat the process inside the ventriculus and some of the spores are excreted ready for the cycle of infection to be repeated. Bailey and Ball have shown that inside two weeks the bee may be carrying 30 to 50 million spores. The immediate result is that the bee is no longer able to digest its food efficiently. In particular the hypopharyngeal glands fail to develop fully so the worker is less able to produce brood food and there will be less protein stored in the fat body. This under-nourished bee will start foraging earlier than normal and will die much sooner. Some experiments have shown the life span to be between 22% and 40% of that of healthy worker bees. If a queen becomes infected then her egg laying is reduced and she is likely to be superseded.

The effect on the colony will depend on the extent of the infection and the time of year. Over the winter, because more of the workers die early and those remaining are less able to feed the brood, the colony will fail to develop in the early spring; it may die or struggle on. In the summer a smaller proportion of the eggs will develop to the adult stage.

As the weather improves and bees are able to leave the hive to die or to defecate the disease level should go down and the colony recovers though the early set-back means that it will not do as well as colonies which are initially disease free.

Nosema does not affect larvae and newly emerged workers are free of the disease until they start cleaning infected combs. There are no specific indications of nosema but if a colony seems to be struggling in the spring then this disease may be the cause.

Dysentery is not a sign of nosema, it is a sign of a digestive problem but if nosema is also present then bees clearing the mess will also pick up the spores and become infected. According to Bailey and Ball bees with nosema are more likely to suffer from dysentery.

What should you do?

If in doubt get a microscopist to check a sample of your bees, or do it yourself if you have a suitable microscope. You need to collect a sample of about thirty worker bees, preferably the foragers since in these older bees the disease will be most developed. This is most easily done by blocking the entrance for a few minutes when the foragers are flying well. The returning bees will gather on the hive by the entrance and can be scooped into a matchbox. If in doubt then hold a piece of glass or clear plastic over the box while you open it to see how many bees you have trapped. I often find it convenient to collect bees in two matchboxes to be sure of having a good sample. The bees need to be killed which you can do by putting the matchbox in a freezer for a day or so, or more quickly by slipping into the box a piece of absorbent paper soaked in ethyl acetate, or some people use petrol. If you are not examining the bees yourself do remember that your microscopist will need to know that they are coming and will much prefer them to be fresh but dead on arrival. Nosema spores can be identified in long-dead bees but the microscopist will usually also check for acarine and this is easier to do in fresh bees.

It is very common to find a low level of nosema present, especially in the spring. If your bees are found to have a much higher level of the disease then you will need to consider the use of Fumidil B. This is an antibiotic which was originally developed for use on people suffering from amoebiasis. We are fortunate that it is still available for bees, although from time to time its future is threatened by regulations. As always follow the manufacturer's instructions but if a spring treatment is needed Prof Pickard has suggested putting the dose in syrup, as usual, and then using a hand sprayer to spray the bees so that they all get the treatment as they clean themselves up.

Routine precautions

Good management can reduce the incidence of nosema to a level at which it is not a problem so that this antibiotic treatment is not needed. Clean, or at least well-disinfected, combs are your first concern and have rightly been given much publicity in recent years. I have heard of some very capable beekeepers who perform a Bailey frame change on all colonies every year, individuals vary in the details but a good description of his method was given by John Powell in BBKA News for February 2002. Incidentally, is this manipulation the only significant development in our range of beekeeping techniques to be introduced in the second half of the last century? Eliminating old combs with their load of spores will reduce the problem, if you are unwilling to do a complete change then take out most of the broodless combs at the first inspection, feed your bees and as the brood expands give them foundation, one or two combs at a time placed next to the brood nest. At the height of the summer move all old combs to the edge of the brood chamber so that you will be able to remove them next spring.

Crushing bees is always to be avoided if possible, one reason for this is that it is the young workers who clean up the mess and so take in any nosema which the dead bee was carrying. Feeders of the Miller or Adam type can also result in a few dead bees in the syrup, if those bees are carrying spores then they can be taken up from the feeder.

Related problems

Quite recently it has become clear that difficulties are often due to a combination of problems. We have seen how varroa and viruses together kill colonies and there is also an association between nosema and some viruses. We loosely talk about 'stress' as a factor in making both people and bees more susceptible and it does seem that this is a real effect. Like the chicken and egg problem, it is not clear whether it is the virus or the nosema, which is the stress, but what is certain is that it is the combination, which does, increased harm to our bees. Since we have no easy way of controlling the viruses please do all you can to keep your bees in a hygienic way and so reduce the incidence of nosema in your colonies.

Bees Are The New Silkworms

CSIRO, the Commonwealth Scientific and Industrial Research Organisation, is Australia's national science agency and one of the largest and most diverse research agencies in the world. A team of CSIRO researchers has discovered that the proteins of bee silk, unlike the silk of spiders and silkworms, are small and non-repetitive. This means bee silk is considerably more amenable to artificial production than the silk proteins of silkworm and spiders. The group has identified the honeybee fibre genes and their results have just been published in, *Genome Research* - 'A highly divergent gene cluster in honeybees encodes a novel silk family'.

Dr Tara Sutherland and her group from CSIRO Entomology are looking at silks produced by other insects and the results of their recent work have been published in *Molecular Biology and Evolution*, in the paper Conservation of Essential Design Features in Coiled Coil Silks.

"Most people are unaware that bees and ants produce silk but they do and its molecular structure is very different to that of the large protein, sheet structure of moth and spider silk. The cocoon and nest silks we looked at consist of coiled coils - a protein structural arrangement where multiple helices wind around each other. This structure produces a light weight, very tough silk," she says.

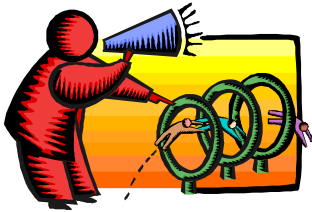
"We had already identified the honeybee silk genes," says Dr Sutherland, "and now we have identified and sequenced the silk genes of bumblebees, bulldog ants and weaver ants, and compared these to honeybee silk genes. This let us identify the essential design elements for the assembly and function of coiled coil silks".

"To do this, we identified and compared the coiled coil proteins from cocoon and nest silks from species which span the evolutionary tree of the social Hymenoptera (bees, ants and wasps)," she says.

Bees and ants produce high-performance silk and, although the silks in all these species are produced by the larvae and by the same glands, they use them differently. Honeybee larvae produce silk to reinforce the wax cells in which they pupate, bulldog ant larvae spin solitary cocoons for protection during pupation, bumblebee larvae spin cocoons within wax hives (the cocoons are reused to store pollen and honey), and weaver ants use their larvae as 'tools' to fasten fresh plant leaves together to form large communal nests..

These groups of insects have evolved silks that are very tough and stable in comparison to the classical sheet silks and it is probable that the evolution of this remarkable material has underpinned the success of the social Hymenoptera. Coiled coil silks are common in aculeate social insects i.e. those that have stings but not in aculeate parasitic wasps. These social insects are higher up the evolutionary tree and the coiled coil silks appear to have evolved about 155 million years ago.

"Silk is an exceptionally strong material and many groups are vying to make the first artificial silk," lead author Dr Tara Sutherland says. "Most people are unaware that honeybees produce silk but they do and we have studied it."



Once again in February 2008 the regularly scheduled "Bee-ginning" bee keeping course will start. The course will be offered from 6:00pm to 6:45pm on the 3rd Tuesday of each month at Stedman's Bee Supplies in Silverdale. The cost is \$10 for the study guide and \$24 for a one-year membership in the West Sound Beekeepers Association. The course covers everything you need to know and do in the first year of keeping honeybees. There is no

charge for the exam.

Also during January's Association meeting, those interested in the journeyman level accreditation are invited to go over the curriculum for the more advanced program.

I urge all members to post the flyer(below) or a copy of it, or several copies, in a place where it can be seen by the public at large. This will help bees, beekeepers, potential bee-keepers and beekeeping in general.

Please be sure to cut in between the tear-off information stubs so people will feel encouraged to take them!

Thank-you,

The editor

Yes! I want to be a member of West Sound Beekeepers' Association during 2008. I have enclosed a check payable to West Sound Beekeepers Association Check one:

\$24 annual household membership dues \$34 Bee-ginner class fee (\$24 membership dues + \$10 study guide)

NAME(S): _____

ADDRESS: _____

PHONE: _____ EMAIL: _____

Please send my newsletter via **email** or by **US Mail**. (circle preference)

Please return to:

Dennis Heeney, WSBA Treasurer, 5350 Welfare Av, Bainbridge Island, WA 98110

Recipe Corner:

Orange-Poppysseed Cake



**My first one: Poorly joined,
Overcooked, and Delicious!**

Ingredients:

1 c. butter (soft)
1 c. sugar (c&h)
3 eggs, separated
1 c. sourcream
1 tsp orange brandy
(Grand Marinier is my favorite)
Grated rind: 1 orange

1/2 c. poppyseeds
2 c. all-purpose flour
1 tsp baking powder
1 tsp baking soda
The Glaze:
1/2 c. honey
1/4 c. orange brandy

Directions:

1. Preheat oven to 325 degrees F Butter and flour the bottoms and sides of a 9 inch tube pan (or Bee cake mold).
2. cream (room temp) butter, sugar, & egg yolks; add brandy; mix in sour cream, orange rind and poppyseeds.
3. sift together flour, baking powder and baking soda. Mix into above.
4. Beat egg whites `til they form soft peaks; fold in.
5. Pour into pan or mold (two piece molds: pull batter up to top of sides for easy joining later). Bake until done, 55-75 min. Check by inserting chopstick, fork, or whatever into center. If it comes clean it's done!
6. While still hot, remove from mold; then pour glaze (heated first) over the cake. It soaks in.

Orange flavored whipped cream is particularly awesome with this!



**Williams-Sonoma
Bee Hive Cake
Mold \$32**



**Glazed
With Honey,
Sprinkled
Powdered
Sugar or
Delicious
Buttercream
😊**

Making Bee Candy (fondant)

- 1). 1 pint water to 5 pounds granulated sugar, plus ¼ tsp vinegar per pound of sugar
 - a. . (ratio of water to sugar is adjustable: less water = quicker, harder, drier, more brittle)
- 2). Mix ingredients; bring to boil stirring as necessary. Using a candy thermometer let heat rise to 242 degrees. This is the soft candy stage. While further heating means harder candy and more work for little bee tongues, it is important for the entire batch to get up to temp or else some areas will be runny. I usually play it safe and go a couple degrees higher with plenty of stirring!
- 3). If you pour into your mold or candy board while super hot, you end up with a harder, glassier product. I let it cool to 220-225 degrees, whisk it and pour for a whiter, softer icing.
- 4). Lower pour temps produce fudge like results but don't pour as easily.
- 5). The fondant sets fast. Let it thoroughly cool before moving to avoid cracking.

Be sure your mold is level. Hot fondant burns deep, so be ready to dunk affected areas in ice water in case of a spill. It's also hard to clean up when it cools, so be careful!

- If your bees are light on stores, candy might save it or keep it strong. Don't starve your bees!



With a little ingenuity and some aluminum foil, you can pour candy into bare frames and put them in the hive next to the winter cluster.

Some people make special lids or inner covers to pour the candy in so they will be right on top of the bees when they run out of food.