nnjbees.org

March 2019

NORTHEAST NEW JERSEY BEEKEEPERS ASSOCIATION

A division of the New Jersey State Beekeepers Association

President	**Frank Mortimer**	201-417-7309	3rd V. Pres.	**John Matarese**	201-481-5426
V. President	**John Gaut** – Mentor Coordinator	201-961-2330	Historian	**Karl Schoenknecht**	201-891-0947
2nd V. Pres.	**Jaimie Winters**	551-486-7479	Treasurer	**Bob Jenkins**	201-218-6537

Meeting on: **Friday, March 15 at 7:30 PM**

Location: **Ramapo College of NJ, 505 Ramapo Valley Rd., Mahwah, NJ 07430**

Bee Enthusiasts & Bee Curious Always Welcome! ***Look for the Bee-u-tiful Yellow Signs***

This Month's Meeting:

Swarms: Steps to Stop Them & Early Prevention

Message from the President:

We're getting closer to better weather, but remember, now is the time when many hives starve, so make sure you check on your hives, and if they've gone through their winter food stores, then you have to feed them.

Last month, many of my hives needed food, so I decided to use our club's official recipe for bee candy. (http://www.nnjbees.org/how-to/articles/bee-candy-recipe/) The recipe calls for 2 cups of water, 1 tablespoon of vinegar, and 5 pounds of granulated sugar. The directions say to heat the mixture to 235°f, then take it off the stove and let it cool to 180°f. Once it reaches its cooling temperature, whisk it until it turned opaque and then pour it into a disposable aluminum pan. The directions also said that the mixture was very temperamental, and that you cannot disturb it while it is cooling, don't even look at it funny, otherwise it would not set up properly and instead of a brick of sugar, you'd end up with a sugar slushy.

I went to the store and bought 25 pounds of sugar and 5 disposable "stuffing pans," which I thought was an appropriate name since I planned on stuffing my bees with sugar

candy. I wanted to precisely follow the recipe, so I googled, "how many cups are in five pounds of granulated sugar?" and unfortunately, there was no one answer. Instead, the range was somewhere between 10 and 11 ½ cups, with even two of the largest brands of sugar, Dominos and C&H differing by a ¼ cup. I decided to split the difference, and land somewhere between 11¼ cups and 11½ cups when I measured out five pounds of sugar.

I poured everything into one of my stockpots and stirred it into a slushy goo. I was amazed that two cups of water didn't instantly disappear into the pile of granulated sugar, instead, it was enough water to wet all five pounds of sugar. As the mixture was heating up on the stove, it became more and more liquid. To keep it from burning, I kept stirring the slurry as it came to a full boil. I used an accurate digital thermometer to track to the temperature, ensuring that I pulled it off the heat at exactly 235°f. I then set it aside until it cooled to 180°f, and once I verified that it was indeed at temperature, I whisked the beejeebers out of it until it turned a cloudy, snowy white. Last, I poured, spooned, and scraped the sugar mixture into one of the stuffing pans, then put it aside to harden. I repeated the process four more times, so I had five pans of cooling sugar candy on my counter.

The next morning I went down to check on my batches of sugar candy, I found three of the batches were solid, and the others looked like some kind of sugary soup. Disgusted with my inability to turn solid sugar into a liquid and then back into a solid block of sugar, I dumped the two wet batches back into the stockpots to try again. I was frustrated with myself, as I was clearly doing something wrong, but I couldn't figure out what my mistake was. I also didn't want to spend another day in the kitchen cooking up sugar, as my patience had worn thin. Once the first batch had cooled to about 180°f, I again

whisked the beejeebers out of it and poured it back into its pan. I grabbed and lifted the pan to set it aside to cool, and that's when I discovered the wisdom of the old expression, "haste makes waste."

The aluminum stuffing pans that I was using for my candy were disposable and were not designed for repeated use. When I had poured my failed batch back into the stockpot, I had damaged the integrity of the disposable pan, making it unstable, especially when it was holding five pounds of steaming sugar slurry. As I was lifting the damaged aluminum pan to the far side of the counter to cool, and just as the pan was directly over my toaster, it folded in half and the candy poured out. Lucky for me, it didn't make a mess on my countertop, instead, the molten sugar poured into my toaster. I set the damaged pan down so the remaining contents could cool, and turned my attention to the new mess I had just created.

First, I unplugged the toaster, as I didn't want to burden my wife with having to explain to complete strangers that I had electrocuted myself when I was trying to get sugar out of the toaster.

I could see there was about ½ cup's worth of candy in one of the slots where normal people would put a slice of bread. I used a butter knife and a wet rag to clean the sugar out, and by the time I was done, the toaster looked cleaner than the day I bought it. To confirm if all the sugar was out, I plugged the toaster back in and pushed down on the lever to turn it on. At first, everything seemed fine, but the longer a toaster is on, the hotter it gets. After about the two-minute mark, I began to smell something burning, and a plume of black, sugary smoke was coming out of the toaster. I looked into the toaster slots and could see and smell blackened, burning, sugar oozing from the inside walls of

the toaster. When the sugar spilled into the toaster, it must have went behind the inside wall and filled the space between the inner and outer walls.

I again unplugged the toaster.

I waited until the sugar had solidified, and then I banged and hit the sides of the toaster to break up the candy and get it to fall out of the bottom of the toaster. I did this until the pieces of candy stopped falling out of the toaster. I plugged the toaster back in and waited. After the two-minute mark, no smoke. I kept the toaster on, four, five, six minutes, and still no smoke.

Success at last. No more smoke.

As a final test, I put a few slices of bread into the toaster. When the slices popped back up, they were toasted to a perfect, golden brown…on one side.

The other side wasn't even warm.

As I went online to shop for a new toaster, I knew there had to be a better way, and I asked myself, "WWWWD?" What Would Willy Wonka Do? If I wanted to successfully make sugar candy, I had to start thinking like the most magical candy maker of them all.

I stayed away from beekeeping sites, because every one had a different recipe and conflicting advice. Instead, I went to the *American Chemical Society* to understand the chemical reactions that were taking place, as well as to several well-known and well-respected culinary sites for answers. Based on what I read, my two biggest mistakes

were: 1) Stirring the sugar slurry too much as it was heating up to temperature. The experts said not to worry, the sugar will not burn, and the more the mixture is stirred, the greater the chance of error. 2) Use a clean spoon. If your spoon is covered with hardened sugar, then the crystals on the spoon can cause the mixture to fail. Both of these candy-making mistakes cause crystals to form too soon, meaning that only some of the mixture crystalizes, leaving the rest to stay a soupy mess.

I do plan on trying to make bee candy again, as soon as my wife feels confident that I won't destroy any more of our appliances and I'm allowed back into the kitchen. Next time I will resist my urge to "just keep stirring," instead, I'll leave the sugar to just bee. I also plan on experimenting with the final cooking temperature, as the *American Chemical Society* detailed how sugar reacts at different temperatures.

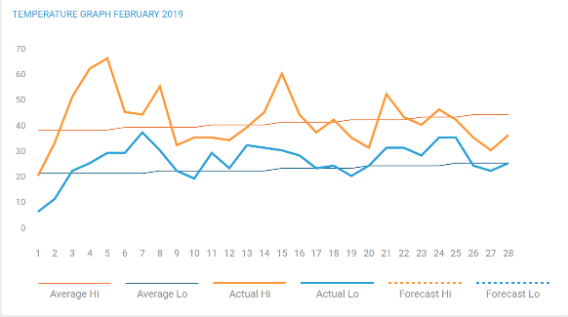
So stay tuned and I will let you know how my future candy cookouts turn out. Until then, if you, or someone you know, likes their toast browned only on one side; smile, because you just found yourself a great deal on the *perfect*, slightly-used toaster.

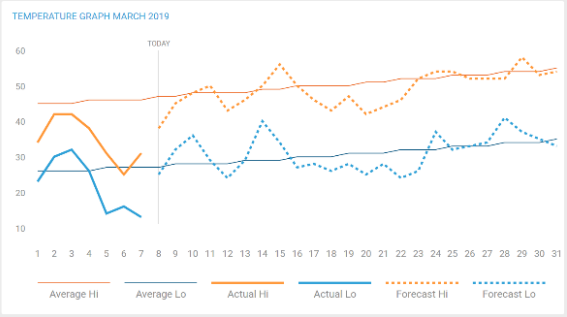
Frank Mortimer
President, Northeast NJ Beekeepers & Used Toaster Salesman

Beekeeping in March

by John A. Gaut
EAS Master Beekeeper

We have had a near normal winter. Sometimes it feels like it has been a lot colder than normal though. Below are the temperature charts for Mahwah. There are both below and above average days and nights. Overall it looks like it has been near normal and the trend will be near normal too. While it is cold and windy outside, some of the the colonies have started rearing brood in the middle of the warm cluster.





I have been getting mostly good reports from other beekeepers. Their colonies have survived the winter so far and are building. Most of my colonies are looking strong; there are a few that I would like to see stronger. I did have a few losses and I diagnosed why they did not survive. A couple nucs due to small clusters, one nuc due to high mites, another nuc due to queen loss (my error in setting it up) and two full sized hives with older queens. I always have a few nucs (from mating nucs) in the fall that are not strong enough but want to try to overwinter the young queens. Lesson learned this year is I should have used those young vigorous fall queens in the full-sized colonies, replacing the older queens.

March and April are critical for a colony. The winter bees that maintained the colony during the cold weather are slowly dwindling. If the winter bees dwindle before they have a chance to raise new brood, the colony may not survive until the nectar flow.

Winter bees have a challenging time during winter. Most emerged in September and October and maintained a warm cluster during the cold winter days and nights while feeding brood. Finally, the winter bees will begin foraging in April and May. Some winter bees actually live as long as 7 or 8 months in our area; more than half of a year! The winter bees need good nutrition to feed the brood. I feed protein patties beginning in March to supplement pollen stored in the hive. When the brood nest is expanding rapidly, nurse bees can quickly consume any pollen in the hive.

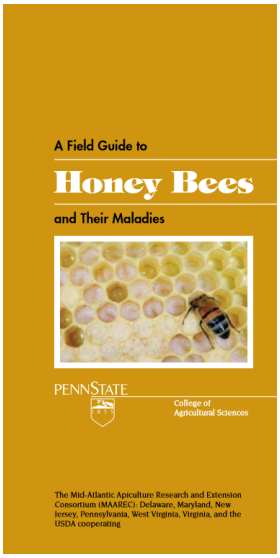
Foragers may be collecting pollen on nice days but an extended period of bad weather stops pollen collection and can set back brood rearing. Having some supplemental protein in the hive helps keep brood rearing going in the bad weather. Colonies also need plenty of honey stores too. Honey consumption increases significantly for brood rearing. During March and April, I continuously monitor colonies to insure they have adequate honey (or other carbohydrate) and protein. I only feed colonies carbohydrates (sugar) if they need it. Colonies will need plenty of open comb for brood rearing. If the brood area still has a lot of honey (due to overfeeding), the colony will begin swarm preparation as soon as there is a nectar flow!

I put ApiVar in all my colonies in January; 1 strip for every 5 frames of bees. Most colonies had between 6 and 10 frames of bees so I inserted two strips in the cluster. I moved the strips as needed in February to insure the cluster was in continuous contact with the strips. The strips are removed in March. (I leave the strips in for the full 56 days.) In early April, I will inspect all the colonies, take mite counts (alcohol wash of all colonies) to verify treatments were effective and begin swarm management steps.

If I find any frames of comb that are damaged, very old or have too many drone cells, I will remove those frames and replace with frames of drawn comb. This is a good time to cull old damaged frames since the bees are not likely using them. Old comb can be a reservoir of disease too. If the frames do still have some honey in them, I move them to the outside. The bees will scavenge the remaining honey and then I can remove the frames next time I am inspecting the hive.

Part of hive inspections includes looking for any disease. I am always on the lookout for American Foul Brood, AFB. American Foul Brood is a deadly disease to all the colonies in the area and must be dealt with aggressively! Call the State Apiarist immediately for instructions!!! I also look for European Foul Brood, EFB. European Foul Brood is curable if detected and treated in a timely manner. Other diseases and ailments may also be present.

A very good resource for learning how to diagnose a disease or aliment is:
A Field Guide to Honey Bees and Their Maladies.



An online version is available at:
https://nybeewellness.org/wp-content/uploads/2014/04/Field_guide_to_honeybees_and_their_maladies.pdf

A hardcopy can be purchased online for about $12.

March and April are the time to begin executing your swarm management plan. Strong colonies begin their swarm preparation then too! If a colony's bottom deep is mostly empty, I will reverse the top and bottom deeps. (I will clean the bottom board, level the base for the bottom board and then set the box full of bees and brood that was on top, on the bottom board. The mostly empty box that was on the bottom will go on top.) Reversing the boxes allow the queen to move up and can reduce congestion in the brood nest (one of the conditions of swarming). Many of my colonies will already have some brood in the bottom deep so I do not reverse those boxes. I do add two honey supers with drawn comb to these colonies to relieve brood nest congestion and provide plenty of open space for any nectar to honey processing.

During April, I equalize my colonies. I'll move a frame of bees and brood (mostly capped) from strong colonies to weaker colonies. (I make sure I do not move the queen though!) If a colony is very weak (3 or less frames of bees), I'll combine it with a strong colony. Or I will put the weak colony in a nuc box and give it a new queen when available. I begin raising queens in April and need resources for mating nucs. I will pull frames of brood (mostly capped) and nurse bees along with frames of honey to make mating nucs for the new queens. Both equalizing and pulling frames of brood and nurse bees from strong colonies for nucs are part of my swarm management plan. Reducing the number of nurse bees in a strong colony helps reduce the swarming impulse.

We will be talking more about Swarm Management at our March meeting on Friday evening.

Mite Management

John A. Gaut
Master Beekeeper, EAS

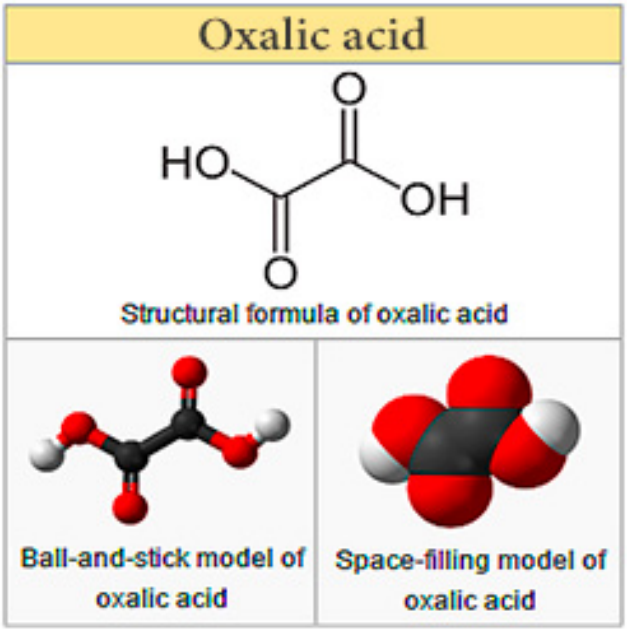
While it is still relatively cold outside, it's a great time to plan. Plan how you will manage the colonies to minimize swarming. Also finalize your mite management plan including alcohol wash dates and treatment dates. I shared my plan earlier this year. Here it is again in case you need it!

Mite Management Schedule

Planned Date	Task
Saturday, January 19, 2019	Treat with ApiVar. Place strips on frames of brood.
Thursday, February 14, 2019	Move ApiVar Strips After 4 weeks (if brood nest has moved)
Saturday, March 16, 2019	Remove ApiVar Strips
Monday, April 01, 2019	Alcohol Wash Mite Check
Monday, April 01, 2019	Add Honey Supers
Wednesday, May 15, 2019	Alcohol Wash Mite Check
Friday, July 05, 2019	Alcohol Wash Mite Check
Friday, July 05, 2019	Treat with MAQS
Friday, July 26, 2019	Alcohol Wash Mite Check
Wednesday, September 18, 2019	Remove Honey Supers
Wednesday, September 18, 2019	Alcohol Wash Mite Check
Wednesday, September 18, 2019	Treat with ApiVar. Place strips on frames of brood.
Wednesday, October 16, 2019	Move ApiVar Strips After 4 weeks (if brood nest has moved)
Wednesday, November 13, 2019	Remove ApiVar Strips
Wednesday, November 27, 2019	Alcohol Wash Mite Check
Wednesday, November 27, 2019	Treat with Oxalic Acid Dribble if needed

This mite management plan has been successful for several years. The key is to treat for mites in the winter when there is only a small amount to brood. ApiVar in the cluster is very effective and the colony can grow quickly without suffering with parasites and viruses. Alcohol washes are performed to verify the treatment was effective. I treat with MAQS in July just as brood rearing is ramping down. I pick a cooler period in July; I have found MAQS to be very effective then because the formic acid penetrates the capped brood and kills any mites in the brood. MAQS can be used when the honey supers are on the hive. Treating again with ApiVar in the fall (after the honey supers are off) is also very important. This is the time of year when mites immigrate from collapsing colonies. The slow release of the miticide over the 8 weeks is very effective.

But the colony can still have a significant mite immigration issue in late November. If I find mites after any of the treatments are removed, (spring, summer or fall), I follow up with an Oxalic Acid Dribble. Oxalic Acid will knock down most of the phoretic mites but sometimes it is too late; the mites have already transmitted viruses to the bees. I also use oxalic dribble on the queen mating nucs when there is no capped brood.



Last Call 4 Nucs

Nucs $175 Deposits $50 per Nuc

The Club will bee ordering nucs from Grant Stiles
They will bee 5-frame nucs, treated with Apivar

We expect delivery in late April
To reserve Nucs,
Contact Bob Jenkins (bobrita@usa.net)
Quantities Are Limited!

4-Sale

Food Grade 55 Gallon Drums

$10 apiece

Contact **Grant Stiles** for More Information.

grant@stileshoney.com

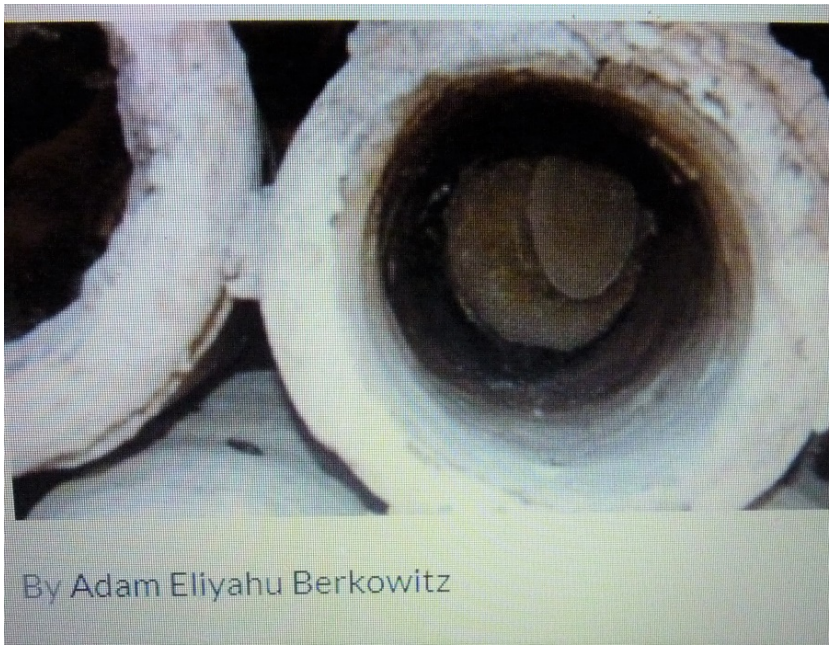
Beekeeping Memories

"Slow Progress"
By
Karl Schoenknecht

For thousands of years we could grow crops, raise animals and make bread yet we knew little about the honeybee. We enjoyed their honey, wax and pollination before the Giza pyramids were built yet thought the largest honeybee was a king. Of course the honeybee is very small and does not take kindly to being held down for close inspection.

I can only imagine the difficulty in trying to capture a queen for examination from a cliff hive or even a tree hive. We needed to first bring the bees to us if close examination were possible. Eventually we developed hives that we could keep closer to home. Woven hives like a modern skep may have existed before all others but no evidence has been found. Ancient woven basket imprints were found in many places but no skep type hives.

The first known man made hives were made of clay but we needed to invent a potter's wheel to make a hive like the recently discovered hives dating back thousands of years.



We needed to discover the magnifying lens (3000 years ago) and the Dutch to invent the multiple-lens microscope and a beekeeper named Jan Swammerdam to make precise woodcuts and engravings of his up close bee examinations. Swammerdam (1637-1680) was excited with being able to closely examine and prove that the King bee was a Queen. Unfortunately, his enthusiasm caused him to work so hard that he died at the age of 43.

Another hard working beekeeper was Francois Huber, the inventor of the leaf hive (1789) that had movable frames like pages in a book. Huber was blind and relied on his servant Francois Burnens to help him with his life-long research. Not until Langstroth (1810-1895) studied Huber's work and invented the modern removable frame hive was the honeybee able to be studied in depth.

.

Find us on Facebook

Our Facebook Group has **over 1800 fans** from all over the world! It's a great place to connect to other beekeepers, so bee sure check out all the great bee pics, bee stories, and bee info.

Remember: http://www.nnjbees.org ***is your website!***
Check it for everything Northeast New Jersey Beekeeping!

Next Month

Installing & Caring for Your New Nucs

NORTHEAST NEW JERSEY BEEKEEPERS

The First Rule of Bee Club: Tell Everyone about Bee Club!