

# A Farewell To Drones

## The RIBA Newsletter

*Autumn 2017 Edition*

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### **Letter From The Editor**

We are officially at the final newsletter (actually, more of a news-novel) for 2017. I will continue to be the editor for the newsletter, despite taking on the added role of managing the RIBA queen yard, but I do plan on cutting back to a more seasonal distribution as opposed to the bi-monthly issues that we started out with at the beginning of the year. This means that even though you will get fewer newsletters, it also means that there will be more content as we continue to summarize the meetings as well as publish contributions from members. Putting the newsletter together is a big job, but a fun one and I couldn't do it without the help of those who contribute photos, summaries and articles. I encourage any and everyone to contribute, whether it be an article, recipe, announcement or call for help. If you have things to share, please email me at [holtcindy@gmail.com](mailto:holtcindy@gmail.com). I am already getting ready for the Winter issue.

I wish you all, and your bees, good health, happiness and survival in the months to come.

Cynthia Holt



## Thermal Imaging as a Beekeeping Tool

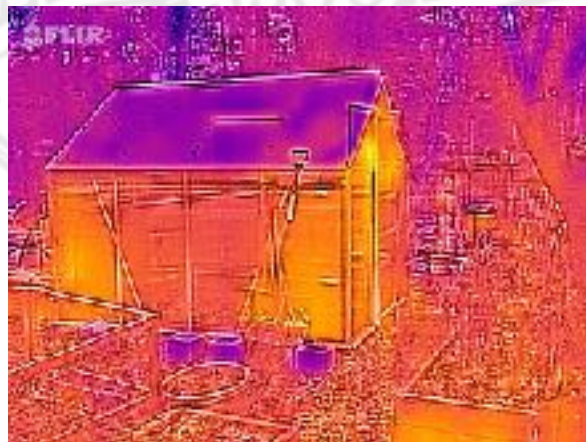
By Ed Szymanski, Norfolk County Beekeepers Association

At the October 2016 meeting of the Worcester County Beekeepers Association, one of the speakers was Dr. Wyatt Mangum, a well known top-bar beekeeper from Virginia. One of his talks was on the use of thermal imaging to “see” what your bees are doing in the winter. Until recently, infrared cameras were very expensive and out of the reach of most beekeepers. Then, FLIR Systems Inc., a leading manufacturer of infrared cameras, came up with a way to team up an infrared camera with the electronics and display of a smartphone. This camera, the FLIR One, can be used with Apple iPhones 5 and above and most current Android phones. The list price of the device is \$249.

I will admit that I worry about our bees in the winter. I would check on them using the “put your ear up to the side and knock” method, until I learned that in the cold weather, bees go into a suspended state, called “torpor”, during which they keep the cluster temperature just right and don’t consume much food. Disturbing that causes them to “awaken”, their temperature rises, and they consume more resources. I don’t do that anymore. So, when I saw what the thermal camera could do, I wanted one. I understand that you can do nothing to save them if they are collapsing in the middle of winter, but there’s a certain comfort in knowing that they’re alive, as most of you understand.

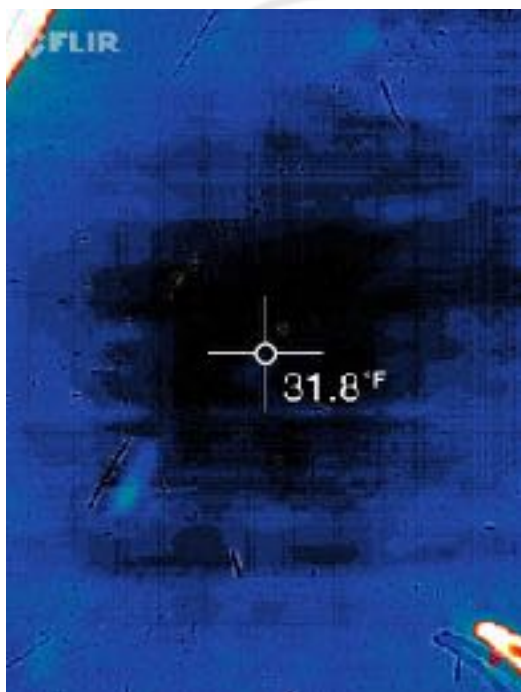
The FLIR One attaches to the data/charging port on the phone. It has its own rechargeable battery; a USB cable is included. The camera has 2 lenses – one takes a digital picture just like your phone would and the second one takes the infrared image. These images are overlaid in the software installed on the phone.

On Christmas Day, I received a FLIR One camera as a gift from my family. I downloaded the FLIR One app onto my phone, read the directions, and went outside with it. This camera is not sold as a beekeepers’ tool per se, so there was some learning to be done. I found that you can:



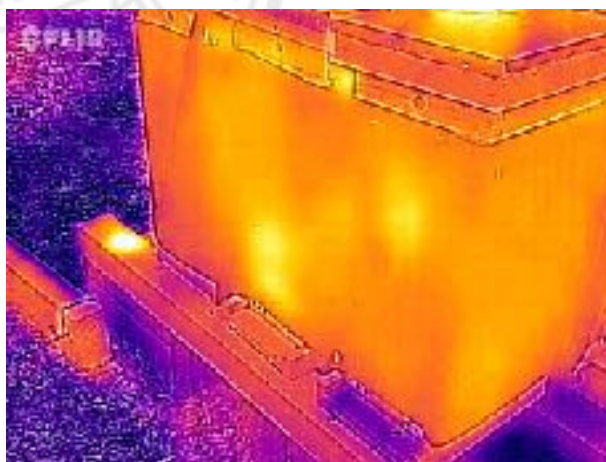
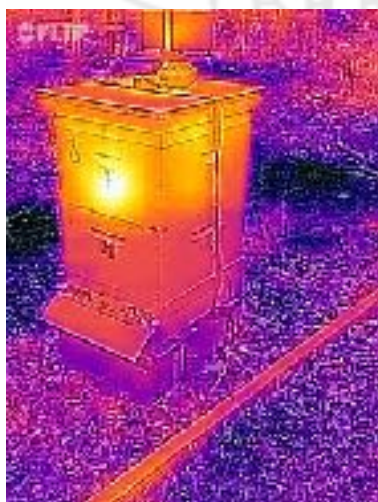
See if someone has been using the car...or prove that the barrels of water heat the greenhouse

I checked the calibration of the temperature display by shooting snow...



Not bad at all.

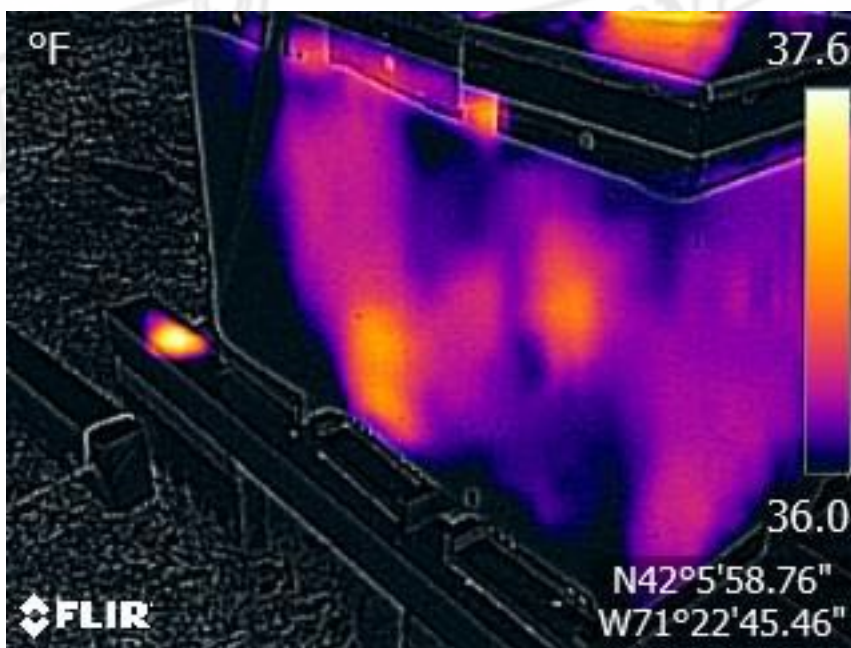
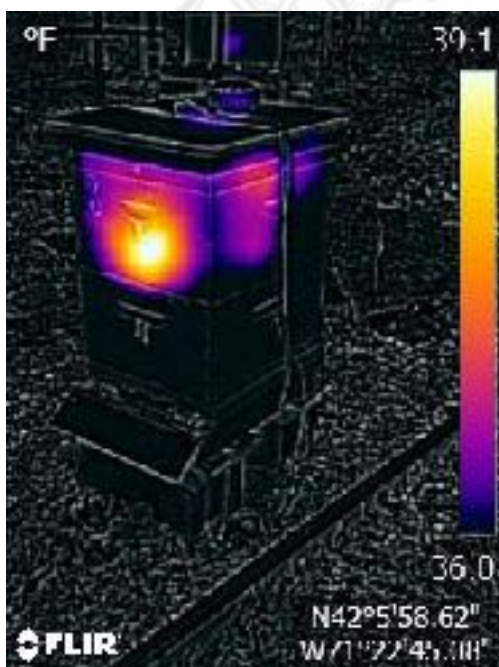
Here are some of the early images I took. The first shows a cluster at the bottom of the top brood box, pretty much centered. You can see that the front view captures a better “picture” of the cluster because the frames of comb insulate between the cluster and the side wall. Lesson #1: this is not an x-ray. The camera is measuring the temperature of the surface of the wood. The second photo shows three 5-over-5 nucs wrapped together with tar paper. The tar paper insulates (that’s why it’s there) but also interferes with the thermal image. Still, there seems to be a cluster very low in the middle nuc. They are Russians, so it makes sense that they haven’t gone up through their stores yet. The near end nuc shows a warm spot in the bottom of the top box. The far end nuc doesn’t show anything here, but its entrance faces the other way, and a shot from the other side shows its cluster. The bright spot on the 4x4 stand is where I had my hand when I bent down to clear some dead bees from the entrance. Lesson #2: do not touch the hives prior to taking the thermal images. The heat from your hand will warm the wood.



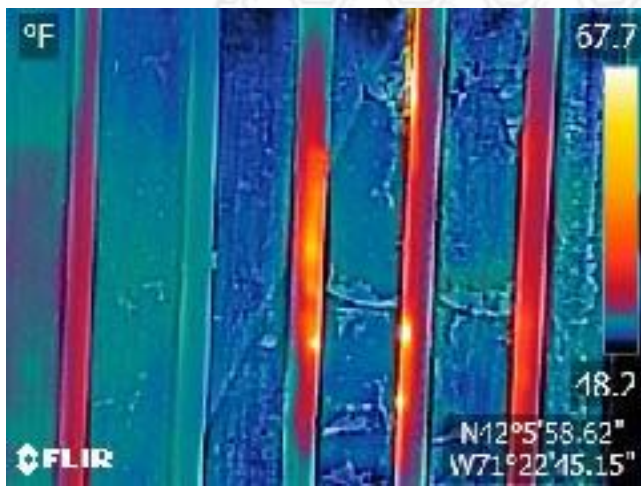
Lesson #3 – Cloudy early mornings are the best time to take thermal images - if you take thermal images when the sun is on the hives or has been in the last few hours, you get a useless image like this:



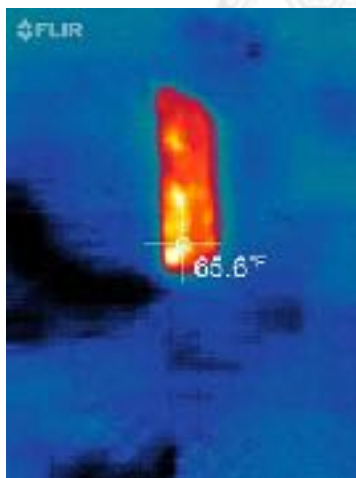
I have now discovered an editing app called Flir Tools that you can download for free that allows for editing and enhancement of images. It is available for phone, PC, and Mac. We can revisit those 2 images. These have had the temperature profile adjusted to remove all but the warmest parts. The cluster is easier to see. Why is there a disconnect between the warm spots on the front and side? Because the wood side frame rails are a better insulator than the wax. The shot of the nucs, edited the same way, takes out some of the interference from the tar paper and makes those clusters easier to see.



Here's something useful on a warmer day – one of the nucs was not showing a defined cluster through the tar paper. I was removing the cover to check the candy board anyway and there was no bees in the top. There seemed to be no activity at all. I slid the candy board aside for a moment and snapped this shot down between the frames. To the right is the outer wall of the box next to the other nuc (there is a small space between them because of the outer covers). The cluster is occupying 2 ½ frames toward the warm side, in the lower box.

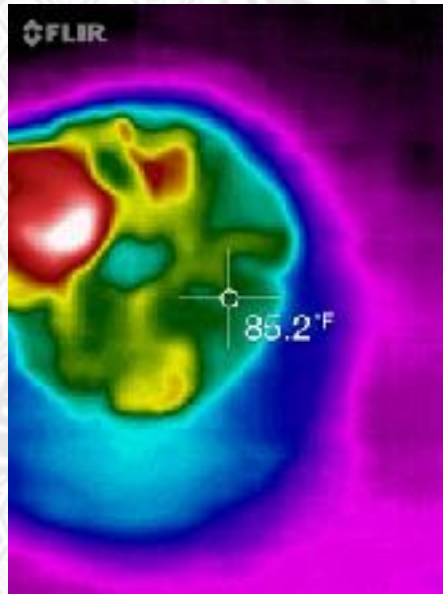
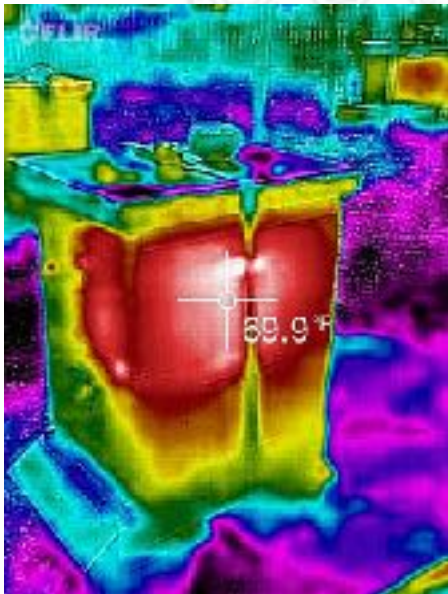


I have also found it interesting to shoot into the ventilation holes on the front of the boxes. The hole is round, but the ends of the frame rails block some of it. We are “looking” at the space between frames. This is a January picture, 65 F is right for a broodless cluster.



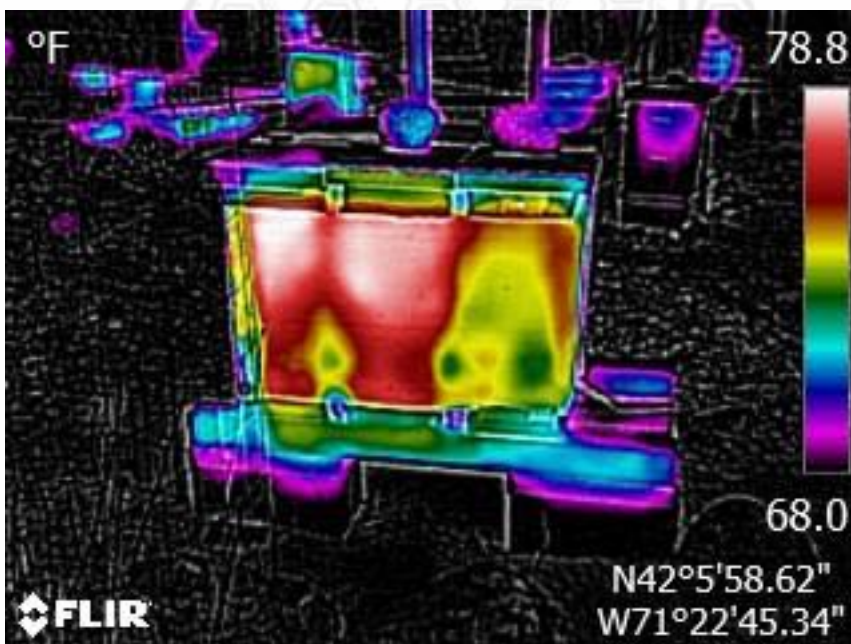
I've been wondering if brood rearing could be identified in late winter/early spring. On a cold day, the temperature differences in the wood might not be so clearly defined. But, I thought, on a 65 F day, a brood-rearing cluster at 85 – 90 F would show a temperature difference above where a broodless cluster would not. So, on the day I am writing this, it is 63 F and cloudy, late February.

I grabbed the camera, and went outside to hives that have been consuming pollen substitute and bringing in natural pollen on the warm days. Sure enough, there is a difference. Going through the vent hole, we see that it's 85 F in there. So it seems to work.

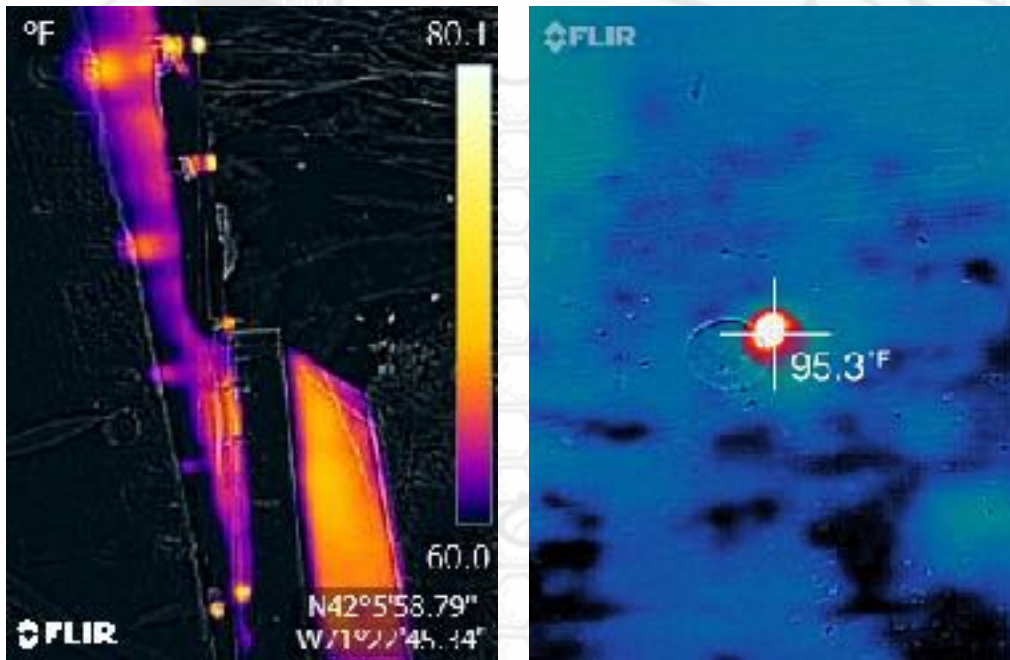


Some other interesting stuff.

The nuc on the right is dead. The other two are warm.



The bright spots in front of the hive in the first photo are bees flying out from the vent holes on a warm day. Wyatt Mangum had explained that a bee needs to heat up her thorax to 90 F or more in order to warm up the wing muscles to allow her to fly. In the second photo, I caught one flying out and measured her temp. at 95 F..



In conclusion, I will say: do you need a thermal imaging device to keep bees? No. But if you are curious and fascinated with them, it's a great tool to own. It will show you position of the cluster, will tell you that you need to think about adding sugar or fondant when they are shown to up high in the hive. It will tell you when brood rearing has started so you can add pollen or substitute. And it will let you know when one has died. It will also show a nest of mice in the hive as a hot spot in a lower corner. Thankfully I don't have that to show you. For me, it helps me to make even more of a connection with these fascinating creatures that I love.

# Recipes From The Hive

## Honey Limoncello by Susan Medyn

4 lemons

2 tsp cardamom slightly crushed

1 to 1½ pounds honey (Based on how sweet you like yours. I find sweet pepper bush honey works nicely for this.)

1-liter vodka

2 large mason jars. (I use quart size.)

Peel the lemons with a lemon peeler, leaving as much pulp as possible on the lemon. Use a small peeler to peel off ¾ inch slices of rind.

Place rind and cardamom seeds into the vodka and infuse for 2 to 4 weeks.

The longer that you infuse, the stronger the lemon cardamom flavor.

Strain seeds and rind from vodka.

Pour vodka equally into 2 large mason jars.

Add between 8 and 12 ounces of honey to each Mason jar.

Your taste preference should dictate how much honey you would like to add.

Shake jars well until honey is dissolved.

You can warm the honey to help it dissolve more quickly.

Add the juice of 1 large or 2 small lemons to each jar.

Let limoncello sit for a week, but feel free to taste if you can't wait.

After a week, pour into bottles that you can seal with a cork or a resealable stopper

I buy 1-liter glass bottles from IKEA for \$2.99. They have a lovely neck and a plastic resealable spring stopper that is easy to open and close.





# Recipes From The Hive

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## **Moroccan Honey Chicken with Apricots**

1 teaspoon ground cinnamon

1 teaspoon ground ginger

1/2 teaspoon turmeric

1/2 teaspoon black pepper

1 1/4 teaspoons salt

4 tablespoons oil

1 (3-lb) chicken, cut into 6 pieces, wings and backbone discarded

1 medium red onion, halved, then sliced 1/4 inch thick

4 garlic cloves, sliced

5 fresh cilantro

5 sprigs fresh flat-leaf parsley

1 1/2 cups chicken stock

2 tablespoons honey

1 (3-inch) cinnamon stick

1/2 cup dried Turkish apricots, separated into halves

Stir together ground cinnamon, ginger, turmeric, pepper, 1 teaspoon salt, and 2 tablespoons oil in a large bowl. Add chicken and turn to coat well.

Heat 2 tablespoons oil in dutch oven, uncovered, over moderate heat until hot but not smoking, then brown chicken, skin sides down.

Add onion and garlic to pot and cook, uncovered. Add honey, cilantro, parsley, stock, cinnamon stick and apricots. Reduce heat and simmer on stove, covered, 30 minutes or place in 425f oven for 45 mins.



# Taking The 2017 Master Beekeeper Exam

On July 30th, 2017 I dragged my long suffering family on a trip to spend the week hanging around a small dank hotel room in Delaware, while I attended the Eastern Apicultural Society Conference, so that I could try my hand at passing the EAS Master Beekeeper Exam. During that week, I had many trials and challenges. Not only did I have to take the exam, I also had to actually walk into the conference on my own, wait in line to register for both the conference and exam by myself, then somehow, locate somebody I actually knew, without making a complete ass of myself. My personal support network, who gets at least one phone call or text from me, before any event begging (demanding) that they save me a seat, would not arrive until late Tuesday, so this was no small feat.

What can I say about this exam that I spent a good portion of the late winter, spring and summer studying for? For starters, studying for 6 months definitely wasn't long enough. The exam is nothing to take lightly, especially if you want to pass.

The EAS Master Beekeeping Exam was started in 1981 by Roger A. Morse of Cornell University, in response to an ever growing need for educating new beekeepers and the public about bees and beekeeping. Examinations consist of written, oral, lab and a field exams during the second and third day of the yearly E.A.S. conference. Not only must you demonstrate a high level of knowledge, you must also demonstrate expertise in a practical setting, while master beekeepers critique and test you. If you ever happen to attend E.A.S. and come across a person (or a group of people) who looks terrified, tearful or dead inside, lurching about zombie-like, from room to room, you have found yourself a master beekeeper candidate.

The written exam questions are made up from 40% bee biology, 40% beekeeping practices and 20% current events. If you have been a beekeeper for even just 5 seconds, you most likely have experience with that whole "ask 5 beekeepers the same question and get 5 different answers" bit so it's not surprising that the questions pertaining to beekeeping practices can be especially tricky.

The oral exam starts with the candidate giving a prepared 5 minute presentation to a panel of 3 master beekeepers, followed by questions. The panel then gives scenarios that the candidate may find themselves in as a master beekeeper speaking to the public. 3 minutes are given to respond to the scenario and answer each question. Scores are based on accuracy, completeness, delivery and presentation.

The lab exam is a familiar sight to anyone who has taken a biology lab exam in high school or college. Stations are setup to identify beekeeping equipment, diseases, treatments, plants and parasites, to name a few.

Last of all, is the field exam, where the candidate opens a hive in front of several master beekeepers and is graded on technique as well as presentation as the candidate explains to the examiners what they are doing, why, and what they are seeing in the beehive.

In order to pass and obtain certification, The candidate must achieve a score of 85% or

higher for each individual section. This is not for the faint of heart.

Instead of giving you a detailed summary of my personal ordeal, I have decided to comprise a list of helpful tips for those who wish to follow in my path,

- **Study. When you think you have studied everything you could possibly study. Do it again. Lather, Rinse, repeat. Only you're lathering yourself with bees.. Repeatedly. Live and eat all things bee related and sleep, only to dream of bees..**
- **Pull out and dust off your bee catalogues, read them all the time, front to back. Memorize them. Learn dosages of medications and the nests of other types of bees and wasps. Don't forget to look up a thing or two or five thousand about pollination, the business of pollination and honey judging. Don't forget the names of those places to send samples to as well!**
- **Advise your loved ones that if they require extra attention while you are busy studying and preparing, they will get better, and quicker results by dressing up as bees or placing themselves in strategically placed empty hive bodies.**
- **Practice speaking about bees in front of people. Make people ask you tough, off the cuff questions. Make your significant other wake you up in the middle of the night, shine a flashlight in your face and demand to know why they would need more than one hive to pollinate an apple orchard. This will help prepare you somewhat for the oral exam. Although, nothing can fully prepare you for that.**
- **Get into beehives, any beehive, all the beehives. Talk while you work, even if you are by yourself. Justify each move and figure out what is going on with those bees.**
- **Ginger products or Pepto Bismol will help with the nausea you will feel as the date of the exam looms closer.**
- **While you are at the conference in the midst of the exams, remember to hydrate, and although all food will stick in your throat, please eat. You don't want to faint.**
- **I also advise against drinking alcoholic beverages while taking the exams. You will feel awful enough without the added hangover. Save the drinks for after the exam, while you are waiting for results. You'll need them then.**
- **It's OK to cry.**

Now perhaps you are probably wondering how I did? I am almost there. I passed the oral, the lab and the field exam. To be honest, I passed all of the exams that I desperately wanted to be done with. I plan to make another attempt at the written exam in August 2018. I have already begun to study.

I will say, and I am sure any master beekeeper who has taken and passed the exam will agree with me on this, the exams are supposed to be really hard. This is meant to be something that you need to work like hell at in order to achieve. I learned so much just by preparing for and taking that exam. Not only that, I saw the glaring holes in my knowledge that needed filling. I also learned that master beekeepers are not the sadists I first made them out to be, but instead, an extremely committed group of people who are not there to romanticize beekeeping, but to be the ambassadors between beekeepers and the rest of the world. And if you are a beekeeper, old or brand new, you know that beekeeping itself, just like that exam, is definitely not for the faint of heart.

-Cynthia Holt

## *RIBA Officers*

President Keith Salisbury

Vice President Malinda Coletta

Secretary Stephen Burke

Treasurer Lori Dobson

Member at Large Dr. Jane  
Dennison

Past President Don Joslin

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Betty Mencucci

Bee School Instructor-URI

Stephen Burke

Bee School Instructor-URI

Ed Karle

E.A.S. Director

Dr. Jane Dennison

Newsletter

Cynthia Holt

Photographer

Emily Langlais

Presentations

John Rodzen

Programs

Lying Peng

Queen Rearing Committee

Scott Langlais

State of RI Bee Inspector

Jim Lawson

Webmaster

Deb Eccleston

## **In Memoriam**

Donald F Joslin, Sr. – Hopkinton, RI  
2017

Don was the President of the Association from December 2015 through December 2016. During his time as president, the Association received and managed a federal grant that still finances an ongoing research project bringing new queens, free of charge, to Rhode Island beekeepers every year. He also presided over executive board meetings and over general meetings, and was the officer in charge at the Washington County Fair. He and his wife Lori logged many hours and miles helping to mentor new beekeepers. The Association mourns his loss. (In lieu of flowers, contributions may be made in Donald's name to **The Tomorrow Fund, R.I. Hospital Campus 593 Eddy St., Providence, R.I., 02909-4947**)

# Meeting Re-cap August

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8/27/17 General Membership Meeting, home of Harriet and Ned Dwyer, Bristol

The business portion of the meeting moved briskly to give our speaker extra time. Keith reported that over \$700 was raised for Special Olympics at the Field Day. A further \$700+ came in through honey sales at Foster Old Home Days. The tally from Washington County Fair was over \$2000, and reported to be a very successful event for RIBA in terms of public outreach. Liying noted that our September 17 general meeting would be highlighting the topic of bee venom therapy. Reports from EAS were tabled to a winter meeting when the projector would be available, but anyone interested sooner was admonished to read the August issue of the newsletter.

Keith briefly recounted his experience with obtaining a veterinary feed directive, the new legal requirement necessary in order to purchase antibiotics used in beekeeping. This was a result of a couple of cases of European Foul Brood detected in his hives during the Field Day and day after. He will have further info on this at a later date but warned that it took him a solid week and a half of phone calls in order to obtain the VFD for the Terramycin required to treat EFB. The website, Honeybee Veterinarian Consortium [hbcv.org](http://hbcv.org) was

recommended as a source for information and to connect with veterinarians who had experience with honey bees. Ed Karle recounted that he has seen lots of hives this year that appear to have EFB, but on testing come up negative. Nutritional stress seems to be a common factor in these lookalike cases.

Wayne Andrews took the stage and gave a rousing talk about the tools of his trade, sharing many stories about his experiences. During the discussion, his main emphasis was: “If you don’t treat for mites your bees will die.”



After the speaker, Ed Karle and Wayne inspected the Dwyers’ hives. Evidence of high mite loads was noted and HopGuard II was mentioned as the prospective treatment. As a side-note, the honey-based digestifs made and shared with the group by Susan Medyn were a huge hit with the crowd and a topic of much conversation.

# Meeting Re-cap September

September 17, 2017 General Meeting (Franklin Farm, Cumberland RI)



After the newbie Q & A session, the regular business meeting commenced. Dr Jane Dennison gave a brief update on the queen grant, urging all members to save the metal ID tags from any grant hives that perish. The tags will be collected at a later date. Treasurer Lori Dobson reported receiving a thank you letter from RI Special Olympics for the \$572 donation made by RIBA after our Field Day. Three volunteers are needed for the nominating committee. Two volunteers are needed to audit the club's books for January. Elections for club officers will be held at the November meeting.

Our featured speaker, Tina McDonald, gave an "introduction to bee venom therapy for beekeepers." Melittin is the main component of bee venom. She

warned that it is not a universal panacea for all problems, but it does work for certain issues. Multiple sclerosis, skin disorders, and shingles were mentioned as benefiting from venom therapy. She notes that winter bee venom is not as potent as summer bee venom. She cautioned that bee venom is not recommended for those who use beta blockers, and that one should always have an Epi-Pen on hand. Standard treatment protocol for chronic conditions is 10 stings three times a week. There is no regulatory body for apitherapy in the US.

Of note was a technique used in which a bee is used to deliver a sting without sacrificing her life. The bee is held in place for 90 seconds so she doesn't twist the stinger off in the patient's skin. The stinger is then removed with tweezers while still attached to the bee. She marks bees used thus with a paint pen to track their longevity.

For those wishing to learn more, she recommends "The Bible of Bee Venom Therapy." Other titles she shared with us include "Apitherapy From a Beekeeper's Perspective," "An Introduction to Bee Medicine," "Health and the Honeybee," and "An Introduction to Apitherapy."

# Meeting Re-cap October

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RIBA's Annual Fall Banquet was held October 15th at Foster Country Club in Foster, RI. Our guest speaker was Dr Heather Mattila of Wellesley College. "Do We Have An Audacious Vision For The Future of Bees?" was the question she posed to us, as she recounted her experiences at the first "Bee Audacious" conference, held in California, December 11-14, 2016. The conference was envisioned by Dr Mark Winston (author of Honey Bee Biology) as a way to bring many various disciplines and backgrounds (commercial beekeepers, pollinators, backyard beekeepers, scientists etc) together for the goal of brainstorming "bold, feasible, evidence-based solutions for the future of bees." The sessions were structured so different people (roles) were constantly mixed, in order to gain a wider viewpoint. Information from the conference is publicly available at <http://beeaudacious.com/> and elsewhere.

Among the “audacious ideas” that came out of the meeting were the following:

- Natural/”Darwinian” Beekeeping: An idea gaining wide exposure lately through Dr Tom Seeley’s writings in American Bee Journal as well as his frequent speaking engagements (including EAS and RIBA’s March 2017 meeting). She emphasizes that this is NOT a hands off approach, as it has frequently been misunderstood.
- Habitat For All: increasing forage opportunities.
- National Pollinator Alliance: similar to other existing agricultural lobbies (think dairy or pork producers). Many bee clubs and organizations existing nationally, but there is little if any communication and/or cooperation among them currently.
- Farm Bill: changing and strengthening the existing Farm Bill to better address the needs of bees and beekeepers. Honey bee pollination is worth 20-30 billion dollars annually in the US, making the bee the third most important animal in agriculture. She recommends watching Bill Klett’s portion of the conference dialogue on YouTube on this point.
- Bee Corps: a nationally supported team of bee educators and hive support.





# Meeting Re-cap November

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## **November 18 General Meeting Recap**

November's general meeting was held on Saturday the 18 at the Guy Lefebvre Community Center in Coventry RI. Keith Salisbury opened the meeting with a moment of silence for the late Don Joslin and Kathy Degraide. After a quick business meeting, a representative from the RI Farm Service Agency briefly addressed the group about various programs they offer for beekeepers, including reimbursements for lost colonies and loans against future predicted honey crops. They had paperwork on hand to register for their programs. See [www.fsa.usda.gov/ri](http://www.fsa.usda.gov/ri) or call 401-828-3120 (option 2) for further information.

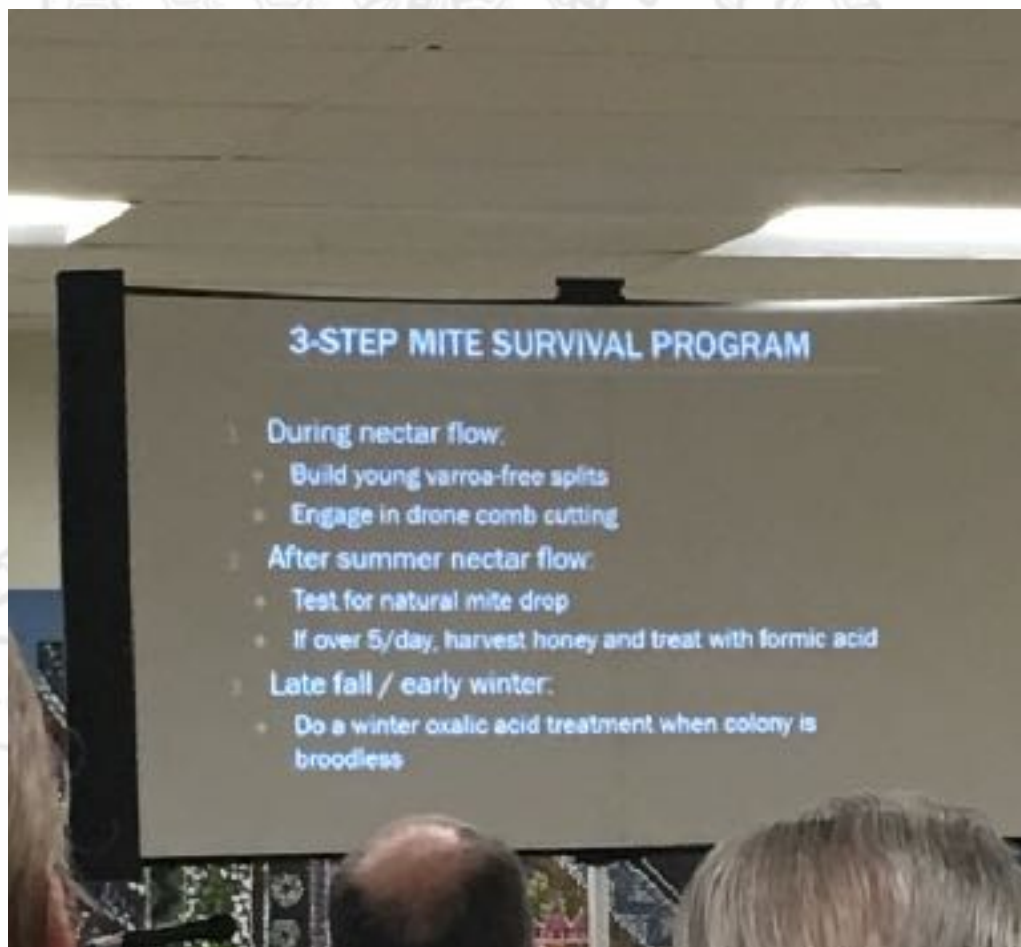
Our annual elections were next on the agenda. All positions ran unopposed and the current slate was reelected to another term. Your 2018 Executive Board is:

- Keith Salisbury - President
- Malinda Coletta - Vice President
- Lori Dobson - Treasurer
- Steve Burke - Secretary

- Jane Dennison - Member At Large

Our guest speaker this month was Dr Kirsten Traynor. Dr Traynor has been keeping bees since 2001 and is the current editor of American Bee Journal, as well as the author of “Two Million Blossoms: Discovering the Medicinal Benefits of Honey,” and “Simple, Smart Beekeeping.” She was awarded a German Chancellor Scholarship from the Humboldt Foundation in 2006-2007 and much of her talk centered around the differences in beekeeping techniques she observed while in Germany.

The German approach to varroa control has less reliance on chemical mite treatments but is quite labor intensive. Starting early in the spring, regular drone comb culling is practiced. Dr. Traynor remarked that varroa prefers drone brood 8-10 times more than worker brood. The next part of their system is to make early broodless splits in the spring. As the majority of varroa found in a hive is in the brood, these splits start out with a correspondingly very low level of varroa. In the fall these splits are often recombined with the “original” colonies. When varroa levels rise to treatable levels despite these mechanical controls, she uses an oxalic acid dribble and/or formic acid (MAQS). She expressed a low opinion of OAV, saying the multiple treatments are hard on the bees, and pose an unusually high level of danger for the applicator, compared to other treatments. This is a necessarily brief summary of a highly involved process. Suffice it to say that beekeeping in Germany has many differences from America, but the crowd clearly saw the promise of some of their techniques.



For those who would like to try her particular method of drone culling, the essentials are as follows: Forget about the green plastic mass marketed drone frames; use a standard wooden frame without foundation (or just a starter strip). In a populous hive this will often be drawn out into drone comb. She removes one drone frame per brood box (ie in a standard double deep Langstroth hive, two frames are removed). She places the frame at the outer edge of the brood nest, between the last frame of brood and the frame of pollen that often demarcates the end of the brood area. Drone brood is typically reared on the periphery of the worker brood, so she is tailoring her methodology to the bees' biology. Once the frame is drawn and full of drone brood, she simply cuts all the wax and brood out and disposes of it, rather than dealing with freezing, waiting for the bees to clean it out, etc. The frame then goes back in the hive to be redrawn. The drone hatches at day 24 so she recommends culling the frames at least every three weeks. Remember that if you fail to remove the comb before the drones hatch, you are now creating a mite factory! You are not trying to remove ALL drones from the hive; other drone brood within the colony is allowed to hatch out naturally so there is little danger from queens being unable to adequately mate for instance.

If you weren't there you missed a truly entertaining and informative speaker. You can sign up for her free newsletter at <http://www.mdbee.com/freebee.html> . Her book "Two Million Blossoms" is available from the Greenville Library as part of the RIBA collection.



# What's Happening?

## Upcoming Meetings and Events

### E-Board Meetings

**\*\* open to all members\*\***

**Tuesday December 5th 6:30-8:30**

**Tuesday January 9th 6:30-8:30**

*all board meetings held at  
Warwick Public Library  
600 Sandy Lane  
Warwick, RI 02889*

### General Membership Meetings

*Winter Meetings held at  
Guy Lefebvre Community Center  
1277 Main St  
Coventry, RI 02816*

**Sunday, December 10th 2pm-4pm  
Holiday Social, Honey Judging**

**Sunday January 14th 2pm-4pm  
More Info to come**

**Sunday February 11 2pm-4pm**

**Sunday March 11th 1pm-4pm  
1st hour new beekeeper meeting**

**Saturday May 5th 1pm-4pm  
1st hour new beekeeper meeting**

## Bee School

Dates for Bee School will be posted on the website

The Rhode Island Beekeepers Association beginner bee school is scheduled to begin in February 2018. The locations, dates and times will be announced shortly. The five-week course will cover everything the beginning beekeeper needs to know.

Subjects will include getting started, the honeybee life cycle, choosing an apiary site, buying bees and equipment, assembly of the hive, installing package bees, catching swarms, nectar sources, bee diseases and pests, hive inspections and wintering. Beekeeping equipment will be displayed and demonstrated each week.

The cost for the 5 week course will be \$65.00 per person. This includes all course materials, a textbook and membership dues in the Rhode Island Beekeepers Association. An email will be sent out to the membership when we are ready to take registrations and registration forms will be posted on the website. Stay tuned.

-Betty Mencucci