

A photograph of a wooden beehive on a stand in a snowy garden. The beehive is made of light-colored wood and has a white roof. It is surrounded by snow-covered bushes and trees. The ground is covered in a thick layer of snow. The background shows a black metal fence and more snow-covered trees.

North Carolina **Bee Buzz**

The Official Magazine of the NCSBA

Trip Report: Apimondia
Sounds of Science
Rescuing NC State Bee Mural
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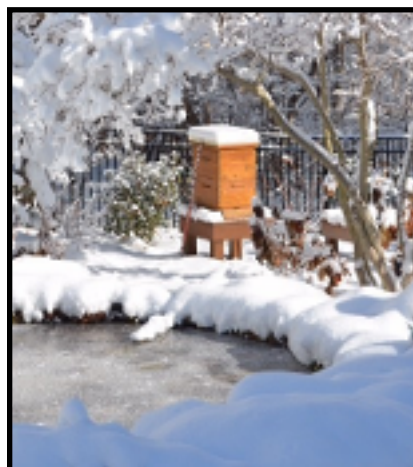
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~ Since 1917 ~

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ON THE COVER:

Photo: Roger Montague

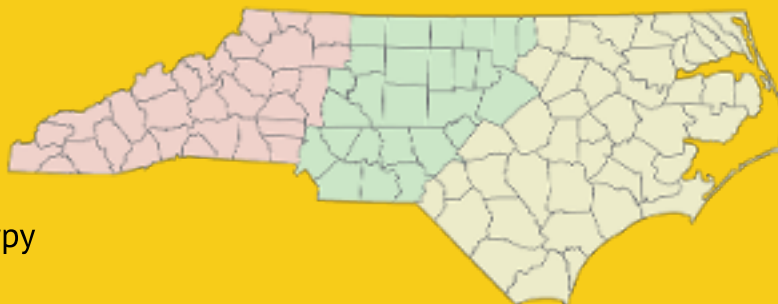
North Carolina State Beekeepers Association



The mission of the NCSBA is to advance beekeeping in North Carolina through improved communication with members, improved education about beekeeping, and support of science enhancing the knowledge of beekeeping.

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From the Bee Buzz Editors:

Bee Buzz Story Submission Deadlines: Spring : Dec 21 - Summer: Apr 21 - Fall: July 21 - Winter: Oct 21

We enthusiastically accept article and photo submissions! Please send us your articles and photos of news and information you'd like to share about your local association's latest events, successes and failures, a biography on a long-standing NCSBA member you would like to honor, or a young beekeeper you'd like to see highlighted. All honey bee-related topics will be considered for publication. While we regret that we cannot always include every submission, we will do our best to print as space permits. Submit your article in .doc or .docx format. Photos should be high quality jpg or tiff format. Please include a caption for photos. Do not embed captions in your photos or photos into your news article, but submit these as separate files. If you do not have access to a computer, we will accept typed or clearly handwritten articles. Mail written submissions to: *Bee Buzz* Submissions PO Box 1771 Pittsboro NC 27312.

Bee Buzz Subscriptions: Please direct subscription questions and address changes to membership@ncbeekeepers.org

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NCSBA Communications - Stay Informed!

Beekeepers, please reference the text portions for the following announcements at www.ncbeekeepers.org

9/2/19	BEES Academy Report
9/5/19	Hurricane Preparedness
10/8/19	Fall President's Message
10/23/19	NCSU Arboretum to 'reveal' Air Bee & Bee at Moonlight in the Garden



Message From The President

by Paul Newbold NCSBA President

First, I would like to thank all the volunteers who spent time at the State Fair NCSBA Honey Booth. It was a great success, mainly due to members stepping up to help. We had during the eleven-day period over 130 volunteers working the booth. Thanks to all who gave their time. Hopefully each of you had a fun day and are already looking forward to helping again next year. I would like to extend a special thanks to Gov Wallace, who showed up each morning to get the volunteers going and brief them on what to expect. And to Tim Huffman, who was in charge of closing the booth each evening, collecting the money, and making deposits. Thank you to Kenny Jones and Rick Coor as well, for collecting the honey, bottling, and delivering to the fair. Another thanks to David Bailey of Bailey Bee Supply for delivering the honey straws to the booth. Way more goes on behind the scene of setting up and running the booth, so a big thanks to everyone involved. Some fun facts about the booth: we had for sale 44,000 honey straws, requiring a full-time position of raking in quarters and dollars all day, and 2,500 assorted size bottles of honey. All in all, a successful event and a major fundraiser for the organization. We sold out of honey on Saturday and honey straws on Sunday. You can find pictures of the

honey booth and some of the volunteers working elsewhere in the *Bee Buzz*.

Coming up is our Spring Conference on March 5, 6 & 7. It will be held again in New Bern in the newly remodeled convention center. Info on speakers and hotels can be found on the NCSBA website www.ncbeekeepers.org.

Be sure to renew your membership. We want you back, and we need your fifteen dollars, half the price of a queen! We need you to operate all the different programs we have, and the work your organization does throughout the year. Remember to fill out the membership application, to make a choice on receiving the *Bee Buzz* either in the mail or the electronic version and also whether you want to receive a Yellow Book for 2020. Be sure to fill out your correct email address, so we can keep you updated on happenings around the NCSBA. And, as they say, "Like" us on Facebook. Chapter officers that keep the records, mail an email to all your members reminding them to renew, whether locally or online with the NCSBA. Send to all your past members and let them know you want them back.

I'm looking forward to seeing you in New Bern. Have a safe and happy holiday season and may all your bees be safe through the winter.

Hoping you, your family and your bees have a Merry Christmas and a Happy New Year!

- Paul Newbold, President NCSBA



NCSBA President Paul Newbold is shown presenting Sen. Brent Jackson with an honorary membership in the North Carolina State Beekeepers Association. This was in appreciation for Sen. Jackson's sponsorship of an appropriation to replace the NCSU field honey bee lab.

(Photo: Charles Heatherly)

In the Apiary: Winter 2019-20 in North Carolina

by Nancy Ruppert, Apiary Inspector, NCDA&CS



The winter season is where the rubber meets the road in beekeeping, where the **beekeepers** rise above the **beehavers**. This most challenging of seasons usually requires advanced preparation and assistance in order for managed beehives to survive.

Those who were able and willing to start winter preparation back in the summer with measures to maximize brood health and food stores will find the winter much easier for their bees and for themselves: confirming the presence of a productive queen, supplementing carbohydrates if needed, and eliminating excessive pests (especially the ever-destructive varroa) during the summer and early autumn most often result in high winter survival of managed honey bee colonies. Beekeepers who completed these tasks in advance can actually enjoy a very EASY winter season, as the bees can actually cruise through most of the winter very well on their own when such help is administered. (Yes, I did say that winter beekeeping can be EASY!!)

Unfortunately, too many people who've taken on beehive management are still in the "too little, too late" (or not at all) category regarding preparing hives for winter, which is the primary reason that 35-45% of managed hives in North Carolina do not make it through a full year. To better accommodate the "In the Apiary" title to this column, I'll confirm that my apiary visits to a wide range of apiaries during this August, September and October revealed that many beekeepers are struggling to recognize queen failures, food shortages, and/or pest-related problems in the brood nest; this lack of knowledge or action can directly kill a hive that could otherwise have been salvaged with timely intervention.

By the time this column gets to its readers, many queen bees will be on their winter vacation from egg-laying, so evidence of queen failure might not be readily apparent. But if hives are short on adult bee populations—fewer than four deep frames or the equivalent of bees, which can be the result of past queen failure or other problems—then it's worth considering combining that hive with another stronger hive, since a weak hive often freezes to death during the winter. If the weak hive is your only hive, insulating the hive may help. Consult your area's experienced beekeepers for details on combining and insulating hives.

Thankfully hive beetles and wax moths are not problematic during winter, but varroa mites are. If varroa levels are not controlled by mid-October, winter bees develop in a minefield of danger and sickness, often unable to survive a full lifespan, resulting in a rapid contraction of adult bee populations between December and February, with the bees then freezing to death. This principle is why even the correct action for pest control is not enough if initiated too belatedly.

One hive management problem that CAN be corrected during the winter is supplementing food stores, if the bees haven't yet starved to death. Sugar candy or fondant are superior to liquid feeding during most of the winter and can also help absorb extra moisture from the cluster. To enhance population buildup during late winter into spring, consider offering protein supplements during late December until late January, when natural pollen tends to be scarce. Bees seem to like the convenience of pollen patties inside the hive as well as the texture of powdered pollen substitute outside the hive, and these measures can give a hive an additional 5,000 or more extra bees by April to enhance honey production or enable splits for apiary increases. Warning: this extra feeding can also lead to swarming, so be ready in late February or early March to attempt swarm prevention measures!

In summary, timely preparation can make or break an apiary. Are you really a **beekeeper**?

Black Jar Honey Contest

NCSBA SPRING CONFERENCE

Only Taste is Judged

Any registered conference attendee may enter honey or be a judge. At least 12 oz of honey in a flip-top container labeled with the entrant's name must be submitted on the first day of the conference:

Thursday, March 5

Rules and information are posted at
<https://tinyurl.com/ncblackjar>

Contact Suzy Spencer at
ncsba.black.jar@gmail.com

BeeFeeders

North Carolina Pollinator Plants

by: Ulana Stuart, NC State Extension Master Gardener Volunteer

Finding a seed catalog in the mailbox during the dark months of winter will brighten a gardener's day. The beautiful glossy pictures are designed to tempt you to plant more than you can realistically take care of. But it can be fun to dream of the possibilities! This column asks, why not try some annuals from seed to supplement your bee feeding? Two gorgeous flowering plants you can grow from seed to feed your native and honey bees are:



Photo: americanmeadows.com

Iceland Poppy

- **Oriental Poppy** (*Papaver orientale*) and **Iceland Poppy** (*P. nudicale*) are annuals here in NC due to the summer heat. Both poppies provide bee pollen and nectar for honey and native bees.

Note that poppy plants need to have their seeds directly sown into the ground, as they don't transplant well. Plant the seeds in late fall or well into winter, as they need the warm and cold cycling in order to germinate. Do not plant them in the spring! They will come up in April and May depending on what NC zone you are in. You can also harvest the seeds months later and save them for next year or to give away.

Other annuals to start from seed for bee feeding are:

- **Buckwheat** (*Fagopyrum esculentum*) is normally considered to be a cover crop that is seeded directly into the ground. However, it can also be interplanted with perennials where there is space. It prefers full sun but can tolerate some shade. A beautiful variety to try is the spectacular 'Rosa Red Soba' buckwheat. Buckwheat is 1 to 2-foot tall and will bloom about 4

weeks after seeding. The tiny flowers form clusters and will bloom for up to 3 weeks, providing yellow-green pollen and plenty of nectar for your bees. Afterwards, the perennials can fill in as they grow.



Photo: Lane Kreilow

Buckwheat

- **Sunflowers** (*Helianthus annuus*) are excellent pollen and nectar-providing annual plants, and there are many kinds to choose from in both color and height. They are best started by direct seeding in good soil with full sun or transplanted carefully from seed flats. The pollen is a very bright yellow.



Photo: NC State Extension

Mexican Zinnia

Continued on Next Page

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- **Mexican Zinnias** (*Zinnia angustifolia*) are extremely heat and drought tolerant bushy annuals that grow to 1 and ½-foot tall with narrow leaves which need full sun. The 1 and ½-inch flowers come in white, yellow, and orange colors and produce a good amount of both nectar and pollen. They can be grown in the ground and also do well in containers.



Photo: Prenn

Mexican Sunflower

- **Mexican Sunflowers** (*Tithonia rotundifolia*) are 4 to 6-foot tall, 3 to 4-foot wide annuals with 2 to 3-inch wide yellow, orange and red flowers. They do best in full sun and bloom for up to 6 weeks producing yellow pollen and nectar. I have seen them covered with pollinators of all sorts.

- **Borage** (*Borago officinalis*) is a superb pollen and nectar annual plant for honey bees and native bees. It

is a 1½ foot tall herb with beautiful dark blue flowers that bloom all summer. It needs full sun and drainage. Start the seeds inside a few weeks before your last frost date.



Photo: Jon Sullivan

Borage

If you have questions on direct seeding, here's a link for the North Carolina Extension Gardener Handbook for general seed starting, planting information and more:


<https://content.ces.ncsu.edu/extension-gardener-handbook>

There are many great seed companies that will send you a catalog to brighten your winter mail box. Here are three of my favorites:

Southern Exposure Seed Exchange, VA

Botanical Interests, CO

Baker Creek Heirloom Seeds, MO



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Trip Report: 46th Apimondia International Apiculture Congress

by Robert Brauer

In September I had the great privilege of attending the 46th Apimondia Congress in Montreal, Canada. The International Federation of Beekeeping Associations holds their Apimondia Congress every other year at different locations around the world. The very first event was held in Antwerp, Belgium in 1897. The objective of the Apimondia Congress is to bring together beekeepers and researchers from all over the world with the aim of solving pressing problems related to apiculture, the bee products trade, bee disease control and new beekeeping technologies. The theme for this year's congress was: *Beekeeping together within agriculture*.

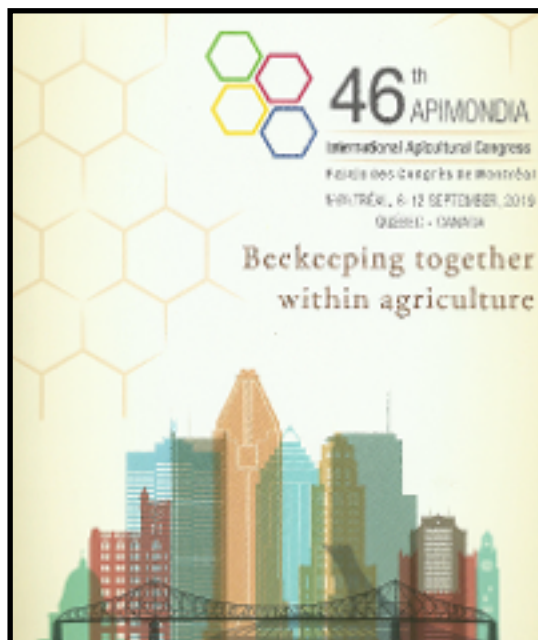
Nearly six thousand beekeepers and scientists from 134 countries attended the international event held Sept. 8-12. I think we all appreciate that beekeeping is a worldwide endeavor, but being in a room with so many beekeepers and scientists from different countries and cultures truly gives one a better perspective and greater appreciation for the very broad appeal of our beloved honey bee!

The conference also included a huge beekeeping trade show called ApiEXPO, with over two hundred exhibitors. The exhibits included manufacturers of beekeeping equipment and gear, companies specializing in bee nutrition and hive technology, bee hive products and honey bee stock producers, as well as educational institutions and beekeeping associations. Many honey-producing countries also had elaborate booths demonstrating their expertise and quality in honey production. The wide variety of products and information covered a full range of needs, from large-scale commercial producers to small-scale hobbyist beekeepers.

Included in the ApiEXPO exhibit hall was a display of all the entries in the World Beekeeping Awards. The categories in the global beekeeping contest included: honey, beeswax, meads, cosmetics and medicines. Honey quality was very much a theme of the conference, and all such products were tested for authenticity using Nuclear Magnetic Resonance (NMR) spectroscopy. Honey was also tested for acidity, moisture, and the presence of antibiotics. A significant portion of the honey entries were rejected due to failure to meet the strict quality standards imposed by the Apimondia Congress. At the conclusion of the competition 140 medals were awarded.

The information exchange portion of the meeting covered four days. Each day began with a keynote presentation by a world-renowned honey bee authority. Gene Robinson (*From Me to We With Bees: Searching For The Genetic Roots Of Sociality*) spoke on the genetic

origins of social behavior in honey bees. In general, social behavior is very rare in the animal kingdom, with only eighteen examples. His work has identified the gene sets responsible for social behavior which appear to have commonality among social animals. He has also found a range of social behaviors among individuals within a population, with some being very social and some far less social or autism-like. Rufus Isaacs (*Integrated Crop Pollination in Theory and Practice*) spoke on the criticality of maintaining a wide range of pollinators for successful food production. A rich pollinator population absolutely requires a quality habitat which has the added benefit of attracting other non-pollinator beneficial insects and wildlife. Peter Rosenkranz (*Worldwide Perspectives on Bee Health*) provided a comprehensive review of all the issues impacting honey bees and other pollinators, including poor beekeeping practices, agriculture pesticides, honey bee diseases and pests, globalization, and modern agriculture practices. Thomas Seeley (*Darwinian Beekeeping*) spoke on his work to determine how the honey bee can evolve to be resilient against all of its modern-day pests and pathogens. His resulting technique of treatment-free beekeeping has challenges and limitations. It is documented in his latest book: *The Lives of Bees*.



Following the joint keynote sessions, there were multiple, two-hour lecture sessions available, each including seven to eight individual presentations under a common theme based on the seven Apimondia Scientific Commissions: Beekeeping Economy, Bee Biology, Bee Health, Pollination and Flora, Beekeeping Technology, Apitherapy, and Beekeeping for Rural Development. Participants could select which sessions

to attend. There was a total of 320 lectures available over the course of the four days. In addition to the lectures, there was a common area set up to display posters of studies or projects falling under the same Apimondia themes. Participants could view the posters during lecture breaks. Many of the displays were accompanied by a person to explain the work. There were 360 individual posters displayed over the course of the four days.

Needless to say, there was an overwhelming amount of information available! I had to pick and choose which lecture sessions to attend based on topics I thought most relevant to beekeeping in North Carolina and Person County. I focused on sessions pertaining to pesticide impacts, honey bee health, apitherapy, and honey adulteration. The information contained below represents my experience in the information sessions and by no means is all inclusive.

There were several presentations on pesticides, and they all focused on the impacts of the neonicotinoids. In general, these pesticides are systemic, meaning that they get inside the plant on which they are applied and as a result, are present in both the pollen and nectar produced by the plant. In most cases, the neonics are not acutely toxic to the individual honey bee foraging on treated plants. The sub-lethal dosing, however, causes chronic problems (i.e. overstimulates the bee's nervous system) resulting in behavior changes which can impact the overall health of the colony. Researchers have found a reduction in the number of queen mating events, and a reduction in queen laying activity. Neonic exposure is also found to reduce royal jelly production, and impact grooming and other hygienic behavior critical to colony health. Researchers have also found negative synergies with neonics and varroa infestation, and neonics and fungicide exposure. Neonics have been found to not degrade in the soil so dry conditions coupled with soil manipulation can result in the chemical becoming airborne and again causing impact on pollinators.

Loss of pollen sources and reduction in pollen diversity was discussed as a key factor negatively impacting pollinator health in general. Honey bee health specifically is improved when rich, diverse pollen sources are available throughout the frost-free months, with the most critical time being late summer and early fall. Pollen contains protein, fat and micro nutrients which can vary between plant species. High-quality pollen sources result in higher lipid stores in the honey bee which are critical for health and survival. Bees infected with viruses were found to have a higher survival rate when they were fed a diet of high quality and diverse pollen. Modern agriculture practices of mono-cropping and weed control are widely recognized as key contributors in reducing pollen diversity and quality.

The varroa mite has long been identified as a vector for a wide variety of viruses impacting honey bees. New research shows that viruses may also be transmitted directly at common foraging locations. Viruses have

been found more often in honey bees when bumble bees are present on common forage. Viruses have also been found on flowers visited by both honey bees and bumble bees. Another honey bee mite pest that occurs in Asia is called *Tropilaelaps*. This pest is smaller than varroa and can coexist with it. Like varroa, it can transmit viruses. It feeds primarily on larva which can result in deformities in the adult bee. Study of this pest and associated mitigation solutions are in the very early stages but will need to accelerate, as the pest has already been found to have migrated outside of its normal range.

I was quite impressed with the amount of research being done in the apitherapy arena. Much of this work in terms of practical application is being done outside of North America. I heard a variety of medical professionals including medical doctors, dentists and veterinarians discuss the benefits of both honey and propolis tinctures in wound healing and tissue regeneration. In both cases the apitherapy product is applied topically or injected into the damaged tissue. These products have been shown to promote the generation of new capillaries which is critical for tissue healing and regeneration. In one example, x-rays were shown of bone loss in a person's jaw due to a tooth abscess. A propolis tincture was injected directly into the damaged area, and subsequent x-rays showed significant bone regeneration resulting in the affected tooth being saved. At the end of the presentation the speaker revealed that the patient was in fact himself!

Honey quality was a reoccurring theme at the conference. Worldwide desire for, and consumption of honey has been on a steady increase over the last several years. Correspondingly, there has been a steady decline in the retail price of honey. This irrational explosion in 'production' can only be explained by the fact that not all of what's out there on retail shelves is real honey. Honey adulteration is a very big problem and is impacting producers of genuine pure honey. Adulteration occurs when other products (i.e. corn syrup) is mixed with honey to increase the available product. A Canadian study conducted in 2018 using 240 samples from a variety of sources found that 22% contained foreign sugars. Beekeepers cannot compete with adulterated honey. Adulteration detection must be expanded, streamlined and enforced. In the meantime, beekeepers need to thoroughly understand the problem and communicate with their customers.

At the conclusion of the congress, the challenges for honey bees and beekeepers was as evident as ever, if not more so. But as with most such endeavors, eternal optimism is a prerequisite. This optimism is enhanced through ongoing open and honest communication with our fellow beekeepers, scientists and researchers, as well as with our agriculture partners. From local beekeepers association meetings to huge gatherings such as Apimondia, dialog on all fronts remains our best hope for a productive beekeeping future.

Robert Brauer is a member and current president of Person County Beekeepers. He has been keeping bees for five years.

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Master Beekeeper Program

Looking Ahead to 2020

by Doug Galloway Master Beekeeper Committee Chairman

The holidays are upon us,

so all of us here on the Master Beekeeper Program Committee wish the blessing of the holiday season for you and yours.

As we look ahead to 2020, there are several educational events that should be on your calendar, and hopefully you will be able to attend some of them. The American Beekeeping Federation holds its annual meeting from January 8 – 11 in Schaumburg, Illinois. NCSBA holds their Spring Conference March 5 -7 in New Bern at the Riverfront Convention Center. NCSBA holds their Summer Conference on July 16 – 18 in Flat Rock, NC at Blue Ridge Community College. The Eastern Apiculture Society holds their annual meeting August 3 – 7 in Orono, Maine at the University of Maine. If you run your beekeeping operation as a business, any of these offer business expense opportunities to learn, visit with beekeepers, and maybe enjoy some different insights about keeping bees in other areas.

I was fortunate to attend Apimondia in Montreal. It was an eye-opening experience on many levels, one I hope you get to experience. Culture, language and perspectives all seemed to blend into a harmonious whole, centered on the common theme of taking care of bees, producing a quality product, and marketing it successfully. I expected international diversity, but when you meet and visit with beekeepers from around the world, it is a glorious experience. I learned a lot, brought back a few unique items, and gained some contacts that I truly value.

One of the committee's ongoing responsibilities is to maintain an up-to-date question bank for quizzes, games and tests. To do that, we keep a library of beekeeping books we value for references. The following is a list of references we rely on to keep our question bank accurate and current. The books listed are essentially in order from beginner level to advanced level; however, there is basic and advanced knowledge to be found in most references.

Beekeeping for Dummies, 4th Edition, Blackiston

First Lessons in Beekeeping, 2007 Edition, Delaplane

BeeCabulary Essentials, Conner

Honey Bee Biology and Beekeeping, Revised Edition, Caron & Connor

Beekeeper's Handbook, 4th Edition, Sammataro & Avitabile

The Hive and the Honey Bee, 2015 Edition

The Biology of the Honey Bee, Winston

The Buzz about Bees, Tautz

Scientific Queen Breeding, Doolittle

The ABC & XYZ of Bee Culture, 41st Edition

What Do You Know, Collison

Queen Rearing and Bee Breeding, Laidlaw & Page

Honey Plants of North America, Lovell

100 Plants to Feed Bees, The Xerces Society

If you need help finding any of these references, contact the Committee at mbp@ncbeekeepers.org and we will be happy to direct you to a source.

Finally, some news about MBP testing. The process for the Journeyman and Master Practical Exam has been updated, but the content remains the same. Testing will be held on both Friday and Saturday of the Spring Conference, but due to limited meeting space, both testing events will be in the morning. Testing will be held *one day only* at the Summer Conference, Friday morning. There will again be a testing event in the Fall of 2020, tentatively in October, with the location still to be determined.

Please monitor the NCSBA website as listings for these testing events will be posted as they approach. All testing going forward will require registration with the committee at mbp@ncbeekeepers.org no less than 1 week prior to the testing event. As you proceed through the Master Beekeeper Program, there is a lot of information on the MBP pages of the website about each level. Reading and understanding what's required will help guide you through the process.

NCSBA Library Update:

We are entering WINTER and I'm already thinking SPRING! The NCSBA library has videos that can help you prepare for what the honey bees will do in the spring. Check them out!

Also, we have ordered several new videos about honey production and beekeeping methods. They will be processed and added to the library's bibliography soon.

Bob Kemper, NCSBA Fred Deer Librarian kemper27530@gmail.com 919-731-2146

Sounds of Science

All that buzzing means something, and your phone can help translate

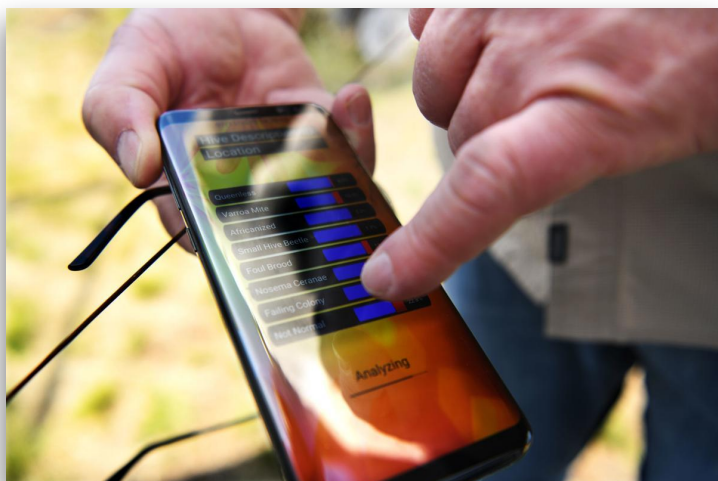
by: Tara Lynne Groth

Honey bees have a sophisticated biochemical communication system through aromas and pheromones, but sound conveys a colony's condition too. Beyond queen piping and tooting, or a colony's "roar" upon a queen's death, a colony's sounds can indicate disease, pests, or Africanization. The physical limitations of our ability to hear the nuanced differences between these sounds is no longer a barrier.

A Kickstarter campaign launched in early 2019 and funded the Bee Health Guru smartphone application (available on Android and iOS). Bee Alert Technology, Inc., a Montana-based company lead by CEO Dr. Jerry Bromenshenk, released the app. After placing your phone or tablet at the hive entrance, the app listens to the colony and produces a report in 30 seconds or 60 seconds (you choose the time) that details a 0 to 100 percent probability of approximately a half dozen afflictions.

Researchers have compiled a sound library that acts as a master reference, and that library gets smarter as more beekeepers use the app and report their hive conditions. It can also help pinpoint brood issues. As the app gets smarter over time, it distinguishes between American and European foulbrood.

Photo: Tommy Martino, Missoulian



Bee Health Guru Smartphone App

Best practices to use the app

"The biggest error is disturbing the bees," Dr. Bromenshenk explains. When you use the app, don't stand in front of the hive or tap the hive, and don't use any smoke. These disturbances affect the colony's sound.

The recommended way to use the app is to insert your smartphone, tablet, or microphone in the hive's entrance and give the bees some time to settle down. Then use the 30-second analysis. If some of the numbers seem concerning, like 20 percent queenright, then analyze the colony again with a 60-second recording. If the numbers seem to stay the same, it's a sign you need to inspect and investigate further.



Bee Health Guru Screenshot

Tune your own listening skills

While not to serve as a replacement for hive inspections, using the app provides an option to quickly check a hive without disturbing the colony. Colleen Spiller, a hobby beekeeper in Chatham County who manages four hives, uses the Bee Health Guru app. "I still practice beekeeping the 'old-fashioned way', by going out into my hives, inspecting, and regularly going out to do hive-side watch," says Spiller.

Southern drawl

"It is pre-mature to trust the app's initial analysis knowing that there are regional bee dialects," says Dr. Bromenshenk. Global sound analysis revealed that honey bees have regional dialects. Not only will bees

from one part of the world have an “accent”, that variation could be present from one part of a state to another. He also explains that the initial database relied on sophisticated recording devices, and now the app is adjusting to the varied audio quality of mobile devices.

Future features

Eventually some beekeepers won't even need to go out to their hives to listen in. Bee Health Guru is testing a ProVersion for commercial beekeepers that will send daily reports and maps. Dr. Bromenshenk shared that “automated mapping of emergent pest and disease problems” will help large-scale operations identify where problems originate right away and will let commercial operations see where other beekeepers are having problems.

Track your hive data

The initial release, intended for small-scale and hobbyists, does not offer data tracking right now due to the complex nature of privacy protection and confidentiality. Beekeepers need to take screenshots or independently record the data for their own records before they send the report back to Bee Health Guru's sound library. Once the report is sent back, it's removed from the beekeeper's phone.

Fortunately, there are other smartphone apps for tracking hive data. Beekeepers could use a combination

of the Bee Health Guru and another app to store their information. Phil Bennett, a Wake County beekeeper with seasonal hives in Windsor, uses the BeePlus app. “Once I moved up from a couple of hives, it was hard to keep track of each situation,” says Bennett, who currently manages 7 hives. He was attracted to how easy BeePlus made it to keep hive information. BeePlus helps track hive inspections, plus queen progeny, finances, maps, and includes a calendar for to-do items.

Report, report, report

Beekeepers are listening. “At this point, the only reason I'm using [Bee Health Guru] is to submit feedback,” says Pittsboro beekeeper Andy Olson. Olson would like to implement a Bluetooth microphone that would remain in the hive. That way he won't need to remove his entrance reducers to use the app.

Dr. Bromenshenk explains that submitting reports is critical toward tuning the app for accuracy. In the first few weeks of the app's release they “had nearly 8,000 data sets uploaded.” He says, “The more data we have, the better the tuning.”

How to get the app: If you missed the 2019 Kickstarter campaign, visit www.beehealthguru.com to donate and get the app.

Tara Lynne Groth is a Certified Beekeeper and agro-journalist in Chatham County. www.fiveacreshoneyfarm.com

Have you heard the BUZZ?

Image copyright 2018 The Good of the Hive



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Bearding... Or Something Else?

by Jackie Hough Scotland County Beekeepers

What do you do first when you go out to your bee yard? Do you look around to take in a general overview, to make sure that you're seeing what you expect to see?

"We find only the world we look for."

-Henry David Thoreau

My hives are all in a fenced pasture now, but some years ago they were widely spread among several places on the farm. One day I was out taking a quiet drive on the golf cart with one of my dogs and suddenly he leaped out of the cart, hackles standing straight up, and started barking hysterically. Startled, I began looking around, toward the next trail, up into the trees – everywhere but where Brendan wanted me to look. There was a lot of tall, native grass in the area, and neither of us could see very far toward the hive we were approaching. I rolled the golf cart forward slowly as he advanced, and then I saw what he had sensed: hive bodies and frames scattered all over the place; some were 20 or 30 feet from the hive stand. The large, black, furry intruder was no longer there, but evidence of her visit – perhaps faint remnants of her smell – set off alarm bells in Brendan's mind well before the scene was visible. Had he not been with me, I might have taken a different trail back to the house and not found the damage for another few days, possibly after more hives had been affected.

Regardless of where your hives are located, is a once-over glance ever enough to tell you what you need to know? As beekeepers, we should acknowledge that the answer to that question is a resounding "no". Even if you don't plan to open any hives, a visit to the bee yard always affords you an opportunity to learn.

During the winter of 2018-2019, I took a few moments to really study at least one of my hives during each visit to my bee yard. And since my hives are now a two-minute walk from my house, I made a lot of visits. Once I was in the yard and had selected a hive, I pretended that I had come upon a potential crime scene and was searching for evidence that might lead to an important discovery. I used techniques described in a book written by Amy E. Herman, an attorney and art

historian. In my opinion, it's a book that should be in every beekeeper's library. She presents her seminars, The Art of Perception®, to police departments, the Department of Defense, the FBI, the National Park Service and more, to train experts to use the perception and communications skills that we all have, but rarely use to their fullest extent. Her book, *Visual Intelligence*, describes four steps – Assess, Analyze, Articulate, Adapt – that form the basis for the book's subtitle: "Sharpen your perception, change your life."

Using the techniques I learned from Herman's book, I now strive to *assess* carefully using all my senses each time I visit my hives. In addition, I take time periodically to look at and *analyze* photos of my hives that I've saved for reference. I use some of the photos in presentations that I give, or plan to give, where I often *articulate* my findings to others. That articulation (hopefully) helps my audiences to *adapt* their practice of beekeeping, and to hone their perception in many facets of their lives over the course of time.

Look at the photo below that shows a hive and some bees. What do you see? Study the photo for a few moments. Get a magnifying glass, if you have one, to look more closely. Observe details large and small. Take note of what's there, and what might be missing.



A hive observed in August 2017

Ready? Let's begin. This first photo, taken in 2017, shows a single hive. Some bees are on the front entrance of the bottom board, and some are clustered against and just below the telescoping top. Is there a

Continued on Next Page

way to tell the approximate time of day? There are no shadows visible, so it could be in the morning before the sun reaches the hive, or later in the day after the sun no longer shines on the hive. Did you notice the brick resting on the telescoping top? The hive stand, which appears to be made of weathered wood? The angle of the leg on the hive stand? Do you think the stand holds just one hive, or might that be another hive barely visible at the far-right edge of the photo?

What about the bees near the top? The photo was in fact taken just after sunset on a hot day. Upon seeing the bees, my first thought was *bearding*. I had to admit, though, that I'd never seen bearding at the top of a hive. I texted the photo to a friend who had more beekeeping experience than I. "Ever seen bearding like this?" I asked. He texted back soon after my inquiry. "Many evenings our hives look similar".

Satisfied, I finished and went back to the house.

The next day was August 21, 2017, the day of the total solar eclipse. I went back to the bee yard in the morning to take another look. Sure enough, there were no bees on the front of the hive. I was just about to walk away when I noticed that there were three bees near the top on the left side of that hive. They were very still and seemingly attentive, all facing the upper edge of the telescoping top. "Why are you here, friends?" I asked. "What do I need to know?" Slowly I lifted the top – and there was that cluster of bees from the day before, spread all the way across the ventilated inner cover. They were utterly calm and unfazed by my presence.

Gazing at the bees I thought, *surely, if you lived in this hive, you would have gone inside last night, right?* I touched a few bees, and gently moved a few aside. No angry response. No sudden loud buzzing. No departures. I moved a few more bees, motioning gently. Still no response. After several more cautious scooping motions, I uncovered what I had ultimately concluded I might find: their queen. A quick trip back to the house for a nuc set-up, and the swarm was soon settled in their new home in my bee yard.

Now look at a follow-up photo of the same hive, taken in 2018. This photo shows the first hive and, as we guessed originally, a better view of what actually was a second hive on the stand. There are some bees in the air; once again, some are clustered against and just below the telescoping top. How has the original hive changed? Do you see the white rectangular imprints on the top of the hive in this later photo? What about the bricks stacked on top of the hive on the right, that most likely made those imprints? There's something relatively flat and yellow on top of the bricks. What might that be?



Same hive observed in July 2018

We can see that the sky is blue, but that doesn't necessarily help us to determine the time of year. The pine trees in the background would be green year round, but the tall weeds in front of the trees and the green grass just visible at the lower left edge of the original hive both suggest that we're still in the main growing season (the photo was, in fact, taken in July of 2018). Look at the lower edge of the bee cluster on the front of the main hive in the photo. Look at the right side of the bottom board beneath the hive. Can you tell where the sun is from the shadows that you see?

What's the configuration of boxes for our original subject hive on the left? There are now three deeps topped by a single medium super. Note the handles on the front of the hive bodies. Compare the handle on the front of the bottom deep with the handle on the front of the middle deep. Is it possible that these boxes were produced by different manufacturers? While you were looking at the handles, did you notice whether the hive bodies had interlocking box joints, or were the fronts, backs, and sides of the boxes screwed or stapled together with simple butt joints? Did you notice the handles and joints on this hive in the photo taken in 2017?

The hive on the right in this later photo has two deeps and two mediums. Might the hive on the left, with three deeps and one medium, recently have had at least one super of honey removed for harvest? (Remember, the photo was taken in July). Three deeps for the hive on the left might suggest that this is a very strong colony, but we can't really be certain unless we

open the hive and inspect the population.

As it turned out, this 2018 photo shows a swarm once again on the front of this hive. After removing and hiving the swarm, there was indeed still a strong population in that colony. Much like the circumstance in 2017, I didn't know for sure where this second swarm had come from. I'm just glad I happened to be home, on the right day and at the right time, to find them.

In October of this year, I went to my bee yard to select a few frames from one of my colonies to place in an observation hive. I was getting ready to head out later that morning to give a presentation at an elementary school, and I knew that the first question I'd get would be, "Where's the queen?!" I found the frame with the queen on it, her green dot easily visible. One more frame, I thought, and I'll be on my way. I lifted the next frame out and turned to place it in the observation hive. Suddenly, out of the corner of my eye, I saw a bee on that frame of a noticeably larger size and distinctive body configuration. It was another queen – unmarked – with an abdomen that appeared quite substantial, suggesting that she was probably well-mated. The colony was not overly congested, and I did not recall seeing queen cells on my last inspection. I am not sure just why she was there.

The *why* doesn't matter, I thought at the time. A queen is a queen! Quickly, I secured her in my re-queening frame and placed her back in the hive for safekeeping before departing for my school presentation. Later that day, after a bit more rearranging, I took quiet comfort in now having a "banked queen" heading into the winter. And I knew that the reason I'd seen her at all was because I had learned from Herman's book to make the "simple differentiation between passive sight and active assessment".

Visual Intelligence is an extraordinary collection of photos, paintings, sculptures, and stories that give the reader a treasure trove of discovery, illumination, suffering, and triumph. To me, it is also a course of study that I can take again and again; in fact, I keep it on my winter reading pile, and I have continued to make time to re-read it every year since I purchased it. I always learn something new, see something in a painting that I didn't see before, acknowledge a weakness in my own methods of observation that I didn't recognize during the last reading. If you begin by applying the techniques in this book to beekeeping, you'll soon find yourself assessing, analyzing, articulating, and adapting more with each passing day, in every part of your life. (Photo credits: Jackie Hough)

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We Started a Queen Yard...

Successes and Failures from Year One

by: Julie Murphy

Beekeepers of Chowan County is a new, small club just completing our second year since organizing. We have grown to fifty-nine members and are very active in promoting beekeeping in Chowan and surrounding communities.

In February 2019, the Born and Bred Program announced an opportunity that encourages clubs to raise NC Queens in which NCSBA reimburses fifty percent of club costs up to \$1,000.00. As a new club looking to expand our beekeeping abilities and club opportunities, this piqued the interest of a few members. After a club discussion and approval from the membership, we created an exploratory committee to identify how to meet the requirements of the Born and Bred Program.

Before we could draft a proposal, we needed to identify whether we could engage more than a handful of members to sustain a queen yard and make the club investment worthwhile. Over the next couple of months, we secured member commitments by outlining initial events through the end of the first year. This included securing and assembling equipment, establishing an apiary, securing donor hives, creating a cell builder hive and grafting through a full cycle of queen rearing. Once we had engaged the members and piqued their interests, we began the process of writing a detailed proposal, laying out the day-to-day schedule of events for the first year, and an outline of goals for the second year. The writing, reviewing, and draft modification process proved to be the most time consuming and challenging for the core committee.

field day. Several members donated equipment and brought tools. This allowed us to purchase additional items that would address our material needs in year two. We allotted ourselves 1 cell builder hive and 2 resource hives which we quickly realized did not provide the resources to supply 12 mating nucs. Consequently, we borrowed 4 additional hives. Club members that donated bees or committed to support a complete queen cycle were offered a free queen when they became available.

In our first year, we targeted three separate queen-rearing cycles. The goal of first cycle was grafting sufficient cells to supply 4 mating nucs a week for three weeks. At the conclusion of that cycle, we evaluated the viability of the procedures used. The second cycle proposed grafting cells for all twelve mating nucs in one day and evaluating this cycle after the last queen emerged. Our third cycle would be based on the most successful of the two previous cycles.

Photo: Elizabeth Towe



Marvin Hare, Cindy Alarcon-Rivera, Ron Cummings, Ellen Colodney, Leslie Lippincott, Benjie Brown, Chris Robertson, Ronny Powell, Buzz Griffin, LuRee Sawyer, Elizabeth Towe assembled Queen yard equipment.

Our original plan outlined using 6 divided 10-frame mating nucs (a 12-queen potential). To streamline the project and comply with B&B requirements, we used all medium supers, and organized an equipment assembly



Ellen Colodney, Cindy Alarcon-Rivera grating with assistance from Buzz Griffin.

The application and proposal we submitted to the Born and Bred Committee was approved as submitted, and on April 27, 2019 we set up our queen yard. The cell builder was prepared on May 3rd and on May 4th

we grafted 21 queen cells and placed them into the cell builder. Our first graft was a huge disappointment, with only one cell accepted. She did emerge and was successfully mated. Fortunately, a local queen breeder offered us extra cells grafted on the same day that allowed us to fill our remaining mating nucs. Subsequent grafts were more successful with a high of 12 cells accepted out of 21. Grafting is our biggest weak point. We are working to develop grafting improvements in year two. Our first evaluation revealed a modestly successful cycle with a total of 8 mated queens out of a potential 12 from 3 grafts. This is after all, a learning and skills development process.

In the second graft cycle we attempted to graft for all 12 mating nucs at one time. Only 7 cells were drawn out, so we made a second graft one week later that produced 4 accepted cells. The cell builder tried to re-queen and we were able to use these cells to fill the 12 mating nucs.



Marvin Hare prepare to insert a frame of grafted larva into the cell builder.

We were unable to perform the third graft cycle due to our late start date. Our first two grafting cycles produced a total of 15 mated queens out of a potential 24. Some queens were made available to members and we used the rest to develop 7 resource colonies for 2020.

Lessons Learned

As with all of beekeeping, queen rearing has a steep learning curve with many potential points of failure, and we experienced them ALL. The Born and Bred grafting training provided an excellent starting point. The process is fairly simple and on a small scale, does not require a “tremendous” amount of time. The critical element is a RIGID schedule of events that must be maintained. Operating a queen yard as a club requires a core group with participation commitments from the other supporting members. We used the program as an educational opportunity for the club. In that regard, we were successful beyond our expectations. We hoped to have more queens available to members, however, we decided to utilize the available queens to build dedicated resource hives for 2020. This strategy will allow us to begin grafting earlier in the spring, weather permitting.

Our greatest (initial) benefit from having started a queen yard is the experience and knowledge gained. Raising queens increased our general bee knowledge and (hopefully) decision-making and beekeeping abilities. If successful, this club’s program will pay for itself or at minimum, recover the club’s investment. Even if we fail to recover the club’s financial investment, we will retain the increased knowledge and experience which will continue to pay dividends within our community of beekeeping. The club moved the queen yard to a new, more permanent location with expanded facilities for grafting and club field days. We are optimistic for year two and look forward to a buzzer 2020.

Julie Murphy began keeping bees in NJ after attending an Introduction to Beekeeping course at Rutgers University. She and her husband drove their four hives south in a rented van when they relocated to Tyner, NC in 2015. Their four hives have grown to ten and Julie is now finishing her service credits for NC Master Beekeeper. She attended the Born and Bred Queen rearing course this spring and was part of the core group managing the Beekeepers of Chowan County (BoCC) Queen Yard. Julie currently serves as the Vice President, Programs Coordinator and Co-administrator of the club’s Facebook page.



The Silent Auction Guidelines are now up on the NCSBA website.

Members can find the link here:

<https://www.ncbeekeepers.org/calendar/state-meetings>

Rescuing an Old Friend

by: Lane Kreitlow NC Master Craftsman Beekeeper

We have to save it! That's how we felt when we learned of the imminent and certain demise of the "Bee Mural", a relic from our past as graduate students of Entomology at NCSU. It was to be an incidental casualty of progress, as the building in which it was housed was slated to be demolished. The "Bee Mural" was a storied piece of artwork that graced the 16-ft wall of our weathered honey bee field facility lacking of modern comforts but definitely not character. Though deserving of but without a proper title, the "Bee Mural" was a cherished artifact, an icon really, to anyone fortunate enough to ever reap its influence.

Photo: Lane Kreitlow



"The Bee Mural"

The mural was the artist's impression of the scene from *The Hobbit* where Bilbo, Gandalf and others are visiting Beorn, a magical person "under no enchantment but his own" who keeps special animals, including honey bees. Beorn was a skin-changer, a man who could change from his human form into that of a massive black bear. He was fierce to his enemies but benevolent to those of good will. He did not hunt or eat meat, but instead lived off a diet of honey and cream. Beorn could talk to the animals. He planted large fields of clover for his bees. The mural depicts the hirsute giant standing amidst his special bees atop a rolling pasture, while the others relax contentedly nearby. We would gaze at that mural every time we went into the building. There was just something about it. It was simple, yet like any good work of art it managed to stir emotion in those who gave it pause.

Just like honey bees.

It's easy to appreciate honey bees purely for their face value. But there's something intangible about them that touches us on a deeper level. It's hard to articulate exactly what that is, but it's undeniable. Honey bees are special. They are special to Beorn, special to many who may find themselves reading this article, and special enough to drive us to move forward with our crazy plan to rescue the mural, as it was to be no easy feat!

The mural was painted on two stacked rows of 8x4 3/4" plywood panels that would have to be removed, sheet by sheet, from the double-storied wall of the building. A daunting endeavor, the mission would require ladders and power tools, a little creativity, a bit of luck, and more than our

two sets of hands. We easily recruited a few more helpers, as the unspoken relevance of the mural needed no convincing. The "rescue group" included Jennifer Keller, Ben "Mr. Buzz" Crawley, Tim Huffman, Heath Kreitlow and Lane Kreitlow.



Photo: Lane Kreitlow

Removing the Mural

Decades of dust and grime could not obscure the character of the piece or diminish the appreciation we had for it. What struck me the most was the impressive detail of the bees. The leg and abdominal segments, and shape of the antennae and wings reflected a certain level of expertise. The artist clearly knew something about insects. I was intrigued.

With the planning of our mission underway, I thought it fitting to seek out the artist, hopefully finding them alive and well, and perhaps re-igniting a long-forgotten memory. With the help of Google, the signature *S. Van Gieson* painted on the bottom of the mural led me to Susan Van Gieson, a painter who is indeed alive and well and living in Kitty Hawk. I was thrilled to share with her the news of our impending rescue mission, and she was thrilled to hear from me. She had not thought of the mural in years but was delighted to become reacquainted with it. A few more phone calls and a day trip to the Outer Banks later, I had the pleasure of meeting in person the woman behind the influential mural.



Photos: Joe Van Gieson

Susan Van Gieson and son Eric in 1979

Susan is a lovely lady who has enjoyed a lifelong passion for painting. She worked for many years in other fields but considers art to be her true calling. After graduating from NCSU in Industrial Arts Education, she worked for several years as an illustrator of books on insects for the NCSU

Entomology Department (which explains her knowledge of insects), as well as books on trees and plants for Environmental Design Press. She went on to earn a Master's in Art Therapy, followed by a 20-year career in the mental health field at Laurel Regional Hospital in Maryland. After concluding that phase of her career, she moved permanently to Kitty Hawk, where she devotes her time to art. Susan is one of dozens of artists to show her work at KDH Gallery, a popular co-operative art gallery located nearby in the heart of Kill Devil Hills.

Photo: Lane Kreitlow



Artist Susan Van Gieson

Susan says she feels very blessed to be able to focus her time on painting. In addition to KDH Gallery, you can find her work at DCAC, Arts of the Albemarle, and various art shows and venues throughout the year. Susan works primarily in oil and watercolor. Her subject matter often focuses on nature scenes which sometimes include spiritual images. The "Bee Mural" was her only piece to date that specifically included honey bees. It was also, by far, her largest work of art. It was during her years as an illustrator that then Professor and State Apiculturist Dr. John T. Ambrose commissioned Susan to paint the mural for him. It turns out, Dr. Ambrose was a huge fan of *The Hobbit*.

Most North Carolina beekeepers know of or personally knew Dr. Ambrose. His beekeeping courses at NCSU enraptured thousands of students over his decades-long career as a Professor of Entomology, state Apiculturist and later, assistant Vice Provost of Undergraduate Affairs and Director of the University's First Year College. Many, including several of us in the "rescue group", were so influenced by him that we too devoted our lives to honey bees, in graduate school, career, hobby, business and beyond. Dr. Ambrose's influence on NC beekeeping is immeasurable. He began the Master Beekeeper Program for the NCSBA, a certification program that has trained thousands of beekeepers since its induction in 1983. Dr. Ambrose was one of a trio of honey bee advocates that included the late Bill Sheppard and the late Irvin Rackely, that set forth the initial proposal and fundraising efforts for a permanent honey bee exhibit at the NC Zoo. As a direct result of their advocacy, and in conjunction with NCSBA, NC Zoological Society, NC Farm Bureau, and many private donors, The Honey Bee Garden became a permanent exhibit at the NC Zoo in 2005. To this day, the Honey Bee Garden remains one of the most popular

exhibits at the Zoo thanks, in a large part, to Dr. Ambrose. If ever there were a person deserving of a 16-foot mural that fused his life's work with his lighter side, it was he.

With the plan in place and with Susan's blessing, it was time to deconstruct the mural. A single panel weighed over 65 lbs. but felt much heavier and even more unwieldy on a ladder. As each panel was detached from the wall, it took three of us to lower it to the makeshift scaffolding, down the ladder, then down to the ground.

To detach the panels without damaging them, we had to remove the wall of the adjacent room in order to gain access to the backs of the panels. Piece by piece, the wall was cut out in sections using a power saw and some clever maneuvering. Once the back of a panel was fully exposed, we used crow bars to pry it from the wall. We then had to carefully pry out all of the rusty nails that held the panels in place. It took almost 6 hours to remove the mural in its entirety. All told we removed 10 panels that day- close to 650 lbs. worth of wood, splinters, and memories.

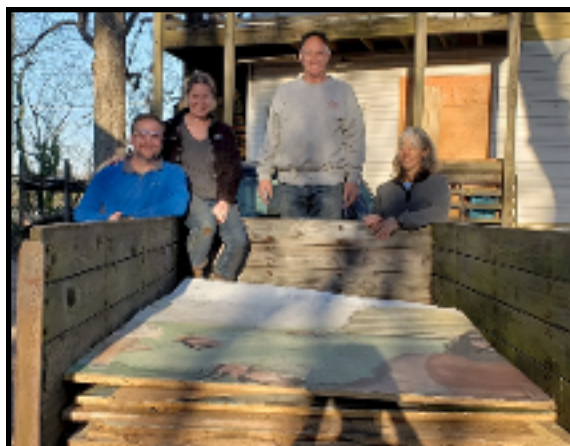


Photo: Heath Kreitlow

The "Rescue Team" from left to right: Ben "Mr. Buzz" Crawley, Lane Kreitlow, Tim Huffman, Jennifer Keller, Heath Kreitlow (not shown)

The panels were in surprisingly good shape, given their age. We first became acquainted with the mural sometime in the mid-1990's, but never knew its history. We speculated that it had been there quite a while at that point, as the old building in which it hung and had been used by the Entomology Department for decades. (It never occurred to us at the time to simply ask Dr. Ambrose about it! Perhaps we enjoyed the mystery.) We discovered that Susan painted the mural around 1979. She painted it directly on the wall while standing on a ladder. A very tall ladder, no doubt. Luckily, the wall was covered in the plywood panels, either prior to or in preparation for the mural. Otherwise, there would have been no way of saving it.

After the mural was finished, members of the Entomology department, family and friends gathered in celebration of its reveal. At the time, Susan's son Eric was 4 years old. In the spirit of the occasion, she dressed him up in a bee costume (page 24). And while he was not too happy about the costume, he was one adorable little bee who was very proud of his mother! He was excited to see the final result of her weeks of hard work. Through the eyes of a 4-year-old, the mural was a massive display of his mother's diligence and creative abilities.

Continued from Previous Page

To Susan, the mural was an exciting opportunity to execute her artistic talent on a large scale. To us, it was more than just a giant bee scene painted on the wall of a sentimental building.

The mural, like Dr. Ambrose himself, was a comforting force during a time of uncertainty and stress that often goes along with being a student. Its impression was more profound than its humble content. Beorn was like a familiar friend, steadfast and true, silently affirming our devotion to the bees. His knowing smile was a quiet reminder of why we chose to study honey bees in the first place. More importantly, the mural was a tangible extension of Dr. Ambrose's influence. It had long faded into the background of distant memories. It took the threat of losing it to remind us what the mural had meant to us. It was definitely worth saving.

In rescuing that mural, we saved a bit of our past, a glimmer of optimism for the future, and a 16-ft token of our appreciation for a really great man.

The "Bee Mural" is currently safe in storage, where it awaits a time in which it can someday, hopefully, be displayed again in all of its glory.



KDH Gallery is a co-operative, artist-operated gallery located at Milepost 8.5 on the by-pass of Kill Devil Hills. Multi-media artist Julie Moyer opened the gallery in 2001, to provide a venue for promoting local artists of the Outer Banks. It features a diverse collection of art in oil, watercolor, acrylic, pastels, photography, ceramics, jewelry fibers, collage, wood, pottery, glass, mosaic, metal and more, from over 40 local artists.

KDH Gallery offers a variety of workshops and classes for adults and kids of all ages, that include painting, drawing, mixed media, and others. Look for them on Facebook to get up-to-date information.

Coincidentally, Julie is also a beekeeper! She is an active member and Program Director for the Outer Banks Beekeepers' Guild. Julie has been beekeeping for over 7 years. She has a strong interest in apitherapy and has taken classes on the subject. She plans to pursue it as a specialty in her beekeeping endeavors.

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Making the Grade:

Beekeepers of the Neuse Participates in Born and Bred Chapter Queen Yard Project

by: By Kimberly Guillemette & Kirby Harriss Rigsby, DVM

Recently, Beekeepers of the Neuse (BKON) received a grade of A- for five queens submitted for evaluation to the North Carolina State University Queen and Disease Clinic. At the October meeting of BKON, Dr. Kirby Harriss Rigsby reported to the membership the results of the evaluation stating the chapter's queens earned high marks for size. However, the queens lost points for being poorly mated. The ensuing discussion of the results of the summer project and inaugural effort at queen rearing was spirited and good-natured. Some in the membership suggested the reason for the queens' failing as lack of libido or lack queen bee-allure. Others in the membership leaned towards problems with the drones. They argued that good drones are hard to find and stated that inadequate suitors or few eligible bachelors may have been the root cause. All joking aside, the discussion highlighted many of the benefits gained by the chapter's participation in Born and Bred Chapter Queen Yard Project.

BKON's participation in the project began with a chapter board meeting in late spring. Rick Coor, past president of the NCSBA, presented to those in attendance the steps and requirements of the Born and Bred Chapter Queen Yard Project. Rick's description of the process indicated leadership was a key ingredient. BKON counted four among its membership who attended past Born and Bred workshops and trainings. Although four members were not needed for the actual grafting, it provided encouragement and reassurance to those in the room without queen rearing experience. So with resources available in the club, in the beekeeping community and from Etienne Nadeau, the Born and Bred Chairman of the NCSBA, the chapter committed to a summer of rearing queens.

Looking back at the close of the chapter's first season of queen rearing, the chapter's efforts to raise grade-A queens yielded many unexpected benefits with few drawbacks. Listed below are some of the gains noted from the chapter's participation in the Born and Bred Chapter Queen Yard Project.

Queen rearing as a chapter activity:

- Advanced knowledge for experienced beekeepers and new beekeepers
- Facilitated education and mentoring of new members
- Provided another avenue for educating the community

- Allowed for organized activities increasing fellowship among the membership
- Contributed to the advancement of queen rearing science
- Supported a local bee economy
- Increased the size of the chapter's apiary
- Increased the number in colonies among members
- Contributed to establishing a Wayne County 4H beekeeper club
- Rendered a commitment to next year's Born and Bred Chapter Queen Yard

Advancing knowledge for experienced beekeepers and new beekeepers. Under the guidance of Dr. Kirby Harriss Rigsby and James Dove, BKON Born and Bred queen rearing began. In poor lighting and with a borrowed grafting tool, experienced and new members grafted young larvae into queen cups on the waiting bars. Those with very little beekeeping experience participated under the guidance of more experienced members. Experienced members mentored others and learned much about the process themselves. The first group of 60 cups saw 26 cells distributed to members and introduced into waiting mating boxes. On the second round of grafting, queen cups were introduced to the bees in the cell builder for polishing and special attention before grafting. Of the 60 cups in the second group, 38 viable queen cells were distributed. Observations in the chapter apiary and from recipient members indicate roughly half of the queen cells produced successful queens.



Nurse bees tend to a frame of queen cells removed from a cell building colony

Providing another avenue for educating the community.

BKON enjoyed a front page spread in the July 22, 2019 edition of the Goldsboro News-Argus celebrating the club for rearing queens. The extensive article highlighted efforts by the club with several pictures of club members engaged in preparing Nucs, grafting and managing hives. The club followed up the July article with another front page story for National Honey Bee Day Celebration. Public outreach for National Honey Bee Day Celebration included displays and education about queen rearing. More than one attendee spoke of coming to the event to learn about the club's queen rearing efforts. This provided evidence of community interest in honey bee management generated from the spotlight in the newspaper. It also confirmed that exposure in local media has an important function to teach and encourage better methods of beekeeping.

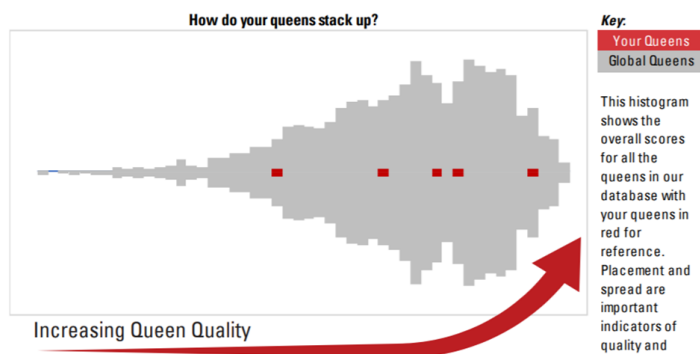


Born and Bred education set up and ready at BKON National Honey Bee Day Celebration

Allowing for organized activities increasing fellowship among the membership. Before the first graft could occur, teams were recruited and organized to divide the workload and involve as many as possible. From cutting and assembling new equipment to photographing and posting on social media, a lot non-grafting related work needed to occur. Ongoing workshops are assisting new members by providing instruction, assistance, and opportunity to work with experienced beekeepers such as a recent Saturday in October in Bill Thering's workshop. Members without access to power tools, knowledge of wood-working or schematic plans for woodenware were able to contribute time and effort to the chapter's supply of woodenware. The personal benefit to all who participated was woodenware for their own colonies and fellowship with others. Many beekeepers are lost by the wayside when a chapter does not offer organized and purposeful opportunities for fellowship among the members.

Contributing to the advancement of queen rearing science. BKON sacrificed five queens to determine how healthy and viable the Born and Bred queens turned

out. The NCSU Queen and Disease Clinic report provided feedback on average queen weight, head width and thorax width. Compared to other queens in the database, the chapter's queens received a grade of A+. The report remarked that large queens indicate strong and well-fed cell builders. The chapter's queens received a B- for insemination quality. The total number of stored sperm was low and sperm stored in the spermathecae of these queens was of low viability.



Feedback on five queens submitted by BKON from the NCSU Queen and Disease Clinic.

Supporting a local bee economy. The chapter level instructions for the Born and Bred project clearly define fostering North Carolina honey bee micro-breeders as a goal of the project. Breeding for queens that are successful in our region, less reliance on queens from the Deep South, and promotion of efforts to launch local businesses related to beekeeping, support a local economy that is good for agri-business in North Carolina. Queens that are successful in spite of mites and tolerate the unpredictable seasons are valuable. Avoiding the inadvertent import of the Africanized honey bee from breeders in Georgia and supporting those wishing to enter a new business venture related to their beekeeping hobby are all reasonable goals. Even the simple act of purchasing equipment for the project from a North Carolina vendor brought instant benefit to the local bee-economy.

Increasing the size of the chapter's apiary. After sacrificing the queens for evaluation, the chapter's apiary was increased by seven colonies. Although seven colonies may not seem like many, the benefits of participating in the Born and Bred Chapter Queen Yard Project will be with the chapter for a long time. The project impacted both members and honey bees.

Increasing the number in colonies among members. A commonly heard question from many new beekeepers is "How many packages should I buy?" The inevitable answer heard at many beekeeping schools is two. However, a rarely heard question from the new beekeeper is "How many colonies should I have?" or better yet, "How many colonies should I work towards?"

Continued from Previous Page

Focusing on graduating certified beekeepers to journeyman beekeepers was recently commented on by Dr. David Tarpy at the NCSBA Spring Conference in Monroe. Dr. Tarpy stated that much attention had been focused on introducing newcomers to beekeeping and that now a focus was needed to increase the knowledge of existing members. Dr. Tarpy followed through on his observation by offering the BEES Academy. Although this might seem like a simple idea, acting on this idea at the chapter level is challenging. Participating members expanded their knowledge of beekeeping while increasing the size of the chapter apiary and their personal apiaries. Getting newer beekeepers to increase their knowledge and commitment was achieved by our chapter by overcoming the common barriers of limited time, opportunity and cash. With the queen rearing project, members contributing to the project receive queen cells.

Contributing to establishing a Wayne County 4H beekeeper club. The inaugural meeting of the Wayne County 4H Beekeepers Club sponsored by BKON occurred on August 15, 2019 with the hopes of encouraging young beekeepers. Rearing queens plays a role in populating a future 4H bee yard.



38 queen cells for incubation in the chapter's incubator

Rendering a commitment to next year's queen rearing effort. With beginner bee school in January, planning for the inclusion of new and existing members in queen rearing starts at the conclusion of bee school with organizing new teams. There is a lot of non-grafting work to be completed in order to successfully rear queens and BKON is ready. May is the target for grafting queens in 2020 and the chapter has plans to engage additional members to attend Born and Bred training workshops. This chapter recognizes the benefits of rearing queens and challenges other chapters to give queen rearing a try.



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