

A close-up photograph of a honeybee on a purple flower with a yellow center. The bee is positioned on the right side of the flower, facing left. Its body is brown and black with yellow stripes. The flower has many small yellow stamens in the center and long, thin purple petals. The background is a soft, out-of-focus green.

# North Carolina **Bee Buzz**

The Official Magazine of the NCSBA

**Purple Brood  
Queen Rearing  
2021 Meeting Info**

**Fall 2021**





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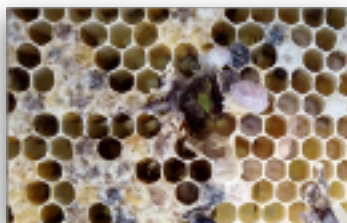




# North Carolina Bee Buzz Fall 2021



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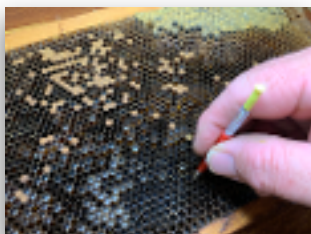
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## North Carolina State Beekeepers Association

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### On the Cover:

"Baskets full of Aster pollen,  
doesn't get any better!"

Photo by Sharon Braswell-Zern  
Yancey County

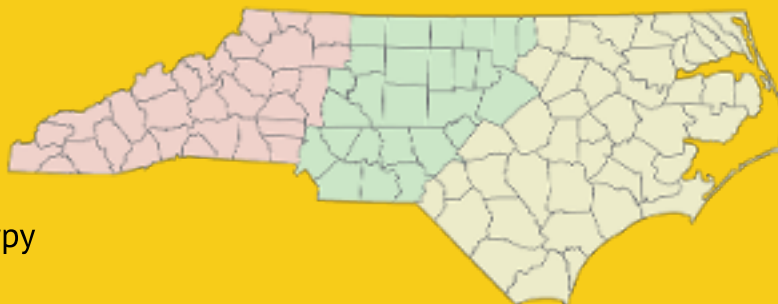
# North Carolina State Beekeepers Association



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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*Contact information for the NCSBA Officers and Regional Directors can be found in your Yellow Book Directory and on the NCSBA website [www.ncbeekeepers.org](http://www.ncbeekeepers.org)*

Webmaster Todd Walker [webmaster@ncbeekeepers.org](mailto:webmaster@ncbeekeepers.org)

## From the *Bee Buzz* Editors:

**Bee Buzz Story Submission Deadlines:** Spring : Jan 7 - 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.

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## Message From The President

by: Doug Vinson, NCSBA President

**The most important** and exciting news that I can report in this message is that we, the NCSBA, will be having an in-person conference in November! It has been a long time since 2019 and I have heard from numerous members that they are so ready. Beekeepers, like the bees they attempt to manage, are social animals. I have been involved with a variety of non-beekeeping groups that meet regularly in conference and many of these I would label boring with a hall full of disinterested participants. That is not the case for beekeepers. Of the many meetings, in state and out, and that I have attended there is an atmosphere of excitement and celebration.

My hope is that you will be able to set aside time to join your fellow NCSBA members in Hickory **November 19-20, 2021**, for our late Summer Conference. This date is encroaching on the holiday season but was set for several unchangeable reasons.

***Let's "Bee" Together in  
Hickory November 19-20!!***

Our typical 3-day format has been trimmed to 2 days. Some activities have, by necessity, been shortened or omitted for now. Honey show, cooking with honey, silent auction and apiary will have to be resumed in 2022.

2nd VP Burton Beasley has worked diligently to develop the educational portion of the conference and has a great speaker line up. Be sure to see the speaker information presented in this *Bee Buzz* issue. The challenge of acquiring speakers to travel and meet in-person with large groups has not been easy. Please make an opportunity to thank Burton for his dedicated effort.

Looking forward into 2022, we will gather in **New Bern March 3 -5, 2022** for our Spring Conference. Our Summer Conference will be in July, and we will likely return to Hickory.

For the same reasons that we can safely meet in November, the NC State Fair will reopen. Those dates are **October 14 – 24, 2021**. The association is planning to operate our honey sales booth as we have in the past except for last year. This effort is rewarding in that it does profit our coffers and allows an opportunity to interact with interested non-beekeepers. That said, the project requires a lot of hours of minding the store. Anya McGuirk has generously agreed to establish a volunteer corps to man the booth. She has recently

made an appeal to chapters to either volunteer for an entire day(s) or volunteer individually. This was started in 2019 and was a success. I heard from some of the chapters that participated that it was a rewarding chapter project. The GAP points that a chapter can earn is another incentive.

All segments of the beekeeping year are important and contribute to success or failure for that given year. Late summer, early fall colony management is an especially critical time. Preparing the colony for months of zero forage leading to nutritional issues and stress from inherent pests and pathogens is challenging to say the least. Varroa population spikes in late summer, early fall are inevitable and must be countered with some abatement method. Failure to do so will greatly reduce your odds of overwintering success. The method you choose is up to you. I realize that this is stating the obvious but each year I see empty boxes around Thanksgiving with the beekeeper wondering what happened. Keep 'em healthy and keep 'em fed.

Recently the state Senate approved a budget that allotted \$4,000,000 for a new field lab at NCSU. A good start, but only a start. If you have any opportunity to communicate with members of our House of Representatives, please encourage them to keep this budget item alive by their approval. The state has funds to do this if they can be convinced that it is important.



**If all goes as planned in November, we will offer MBP testing on Saturday morning, November 20, from 9:00 AM till 12:00 noon, with no written test handed out after 10:00 am and no practical exam packets handed out after 11:30 AM.**

**All levels of testing will be offered. Registration is mandatory. Reservations will be accepted starting Friday, October 15, 2021, and no further reservations will be accepted after Friday, November 5, 2021.**

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# BeeFeeders

## North Carolina Pollinator Plants

by: Ulana Stuart, NC State Extension Master Gardener Volunteer

**Fall is the best time** for you to plant trees and shrubs ("woodies") to add some new blooms for next year's BeeFeeder garden. We are currently moving our outsized perennial garden to a larger location which will provide much needed space for pollinator plant evaluations. We have been transplanting our woodies this fall because they encounter less stress if moved when rainfall is more reliable. Spring plantings can be less successful due to high summer temperatures and the inconsistent rainfall. Finally, did you know that roots continue to grow through the winter? This helps new plantings get a head start on growth in early spring and/or late winter depending on your location.

Here are two woodies we are planting:

**Blackgum** or **Black Tupelo** (*Nyssa sylvatica*) is a beautiful native deciduous tree that grows well in Zones 4 to 9 throughout North Carolina. It prefers moist, well-drained soils in full sun or semi-shade with some protection in high wind-prone areas. Blackgum has outstanding glossy summer leaves which transform to a beautiful scarlet or purple fall foliage. Horticulturists consider Blackgum to be one of the best and consistent trees for fall color.

Photo: Greensboro Shrub Nursery



*Nyssa sylvatica* 'Blackgum' or 'Black Tupelo'

This medium-sized tree is somewhat pyramidal in shape and has a slow to medium growth rate. It would work well as a specimen tree in smaller gardens. You can expect slow growth of about 12 to 15 feet of growth over ten years, but additional water and fertilizer can increase those growth results. A typical Blackgum will grow to a maximum height of 30 to 50

feet with a 20 to 30-foot spread. Specimens have been measured up to 80 feet high in ideal growing situations.

Bloom time will vary from April into May. Blackgum is polygamo-dioecious, which means separate individual male and female flowers can occur on the same tree. You may also have a tree with only male or only female flowers. The amount of nectar and pollen available for the bees is dependent on the number of male and female flowers. The pollen consists of medium size, round to oval yellow pellets.

For more than two centuries, cut sections of Blackgum hollow trunks were used in America as beehives called "bee gums". These bee gum hives were eventually replaced in the late 1800's by Langstroth hives.



Photo: H. Zell

*Ceanothus americanus* 'New Jersey Tea'

**New Jersey Tea** (*Ceanothus americanus*) is a handsome compact native shrub that is also nitrogen fixing. It is 3 to 4 feet in height and 3 to 5 feet in width when grown in zones 4 to 9. It has panicles of creamy white blooms in midsummer (June-July) when few other plants are in bloom. New Jersey Tea grows in part sun to full sun and is quite adaptable, though it does prefer well-drained soils. It does well in smaller spaces and has slow to medium growth rate. Choose the planting location carefully because it has a large red taproot and transplanting it to another location later may not be successful. It will adapt well when planted directly from a nursery container and is drought tolerant. Honey bees as well as native bees are very attracted to the both the nectar and pollen that the blooms produce.

For more information on gardening, use the North Carolina Extension Gardener Plant Toolbox at [www.plants.ces.ncsu.edu](http://www.plants.ces.ncsu.edu).





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# Master Beekeeper Program

## Beekeeping Progress

by Doug Galloway Master Beekeeper Program Chair

**After these past months** of living with the pandemic, it is gratifying to see the **progress** that has been made toward returning our world back to some semblance of normalcy. Change from our normal day to day is always a challenge but doing it in isolation makes the challenge so much more difficult.

**Progress** is not always perceived as an improvement when it is first presented to discriminating reviewers. In the early 70's, the growth of interest in beekeeping was becoming overwhelming for university bee specialists who were being called upon to provide instruction. Dr. Roger A. Morse, Professor of Entomology at Cornell University, Ithaca, New York, saw the need for a large number of qualified beekeeping instructors. In 1976, Dr. Morse started the first United States Master Beekeeper Program at Cornell University for the express purpose of identifying and certifying persons who had an in-depth knowledge of bees and beekeeping to help meet the demand for qualified beekeeping instructors. Were there questions about the ability of non-academics, taking a major role in education and supporting beekeepers? Knowing human nature, it seems likely that there were. Nonetheless, the **progressive** actions taken by Dr. Morse, introduced the idea of Master Beekeeper Programs to the USA which are now so critical to beekeeper education.

In 1981, the Eastern Apicultural Society (EAS) assumed administration of the Master Beekeeper Program that Dr. Morse started. A committee was formed to administer the examination and included familiar names like Dr. Clarence Collison and Dr. Dewey Caron, to name a couple. The EAS is not a training program but a Certification process originally consisting of three exams: written, lab, and field, with an oral exam added a few years later. One of the first successful EAS Master Beekeepers was Bob Cole, a North Carolina Beekeeper. Bob told me that Dr. John Ambrose consulted with him while he was drafting the guidelines for the North Carolina Master Beekeeper Program which originated in 1982. On the heels of his successful testing at EAS, Bob was able to bring **progress** to his home state and help many, many beekeepers, a goal he shared with Dr. Ambrose.

The NCSBA Master Beekeeper Program offers a guided **progression** through the process from beginner to Master Beekeeper and beyond. The process takes time, effort, and dedication. In terms of the highest level, Master Craftsman, a financial commitment to support the cost of research is also required. As the program has evolved over the last 40 years, clarifications of the individual levels have been applied sparingly. When total administration of the program befell the NCSBA in 2011, some necessary adaptations were

implemented, yet the goal of keeping true to the standards envisioned by Dr. Ambrose remained paramount.

To the credit of all who are active in the NCSBA MBP, during the challenges of the pandemic, virtually no participants in the program criticized or complained about the delays in pursuing their next MBP level. The trust and confidence shown by our members both new and established beekeepers is most reassuring. The active participants in the MBP will not be penalized for any delay resulting from the pandemic. A grace period of up to two years will be applied to any candidate who needs and requests that consideration. The committee believes this is the type of **progress** our members deserve.



Testing on June 26, 2021, of the Advance levels was modestly attended by 8 candidates, who were gracious in their appreciation to again be able to test. At this writing, 14 Advanced level candidates are registered to test in Burlington on July 24, 2021. It has been posted on the NCSBA Facebook page that NCSBA has scheduled a Fall Conference for November 19 and 20 in Hickory, NC. The schedule of events for the Conference is still being developed. Currently, the MBP hopes to have testing at that event on Saturday morning. More details along with registration dates will be forthcoming as we are apprised of that event's formatting.

The volunteers supporting the NCSBA, its chapters and individual members are instrumental in the success of many, many beekeepers. This volunteer organization would not exist or succeed without the endless contribution of selfless individuals whose only reward is knowing that they helped provide some level of aid, assistance, and support for their fellow beekeepers. Having worked with members of the Master Beekeeper Program committee for the last 4 years, Mountain chapters members as a Regional Director for the last 3 years, and many beekeepers from around North Carolina and the Eastern United States, the **progress** I have enjoyed as a beekeeper and a person are precious to me and I thank you all.

Bee Safe and Prosper.



## State Fair Honey Sales- Volunteers Needed!

Please help support NCSBA's largest fundraiser of the year by volunteering at the honey sales booth at the NC State Fair in Raleigh, Oct. 14-24, 2021. Our wildly popular honey usually sells out every year, but we need your help to make it happen!

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## In the Apiary: Autumn 2021

by Nancy Ruppert, Apiary Inspector, NCDA & CS

**North Carolina beekeeping** activities in the fall can vary widely, depending upon how far the colonies have progressed in getting ready for winter. Because honey bees follow a calendar that's about six weeks ahead of ours, we have to be proactive in our beekeeping efforts.

Beekeepers who started during the summer to engage in winter preparation are likely to have an easier fall season in their apiaries. Ensuring that there is plenty of good food available, a productive queen, AND limited pest pressure covers the basics of helping colonies survive the challenging winter season, and much of that preparation can be started during the summer. If your colonies are happy and healthy during August and September, they are much more able to raise a generation or two of strong winter bees; strong winter bees and sufficient nutrition is what gets colonies through the winter. So those colonies that are full of healthy bees and brood (and not so full of pests like varroa mites) by summer's end will likely require very little additional time for the beekeeper during fall and even winter.

But not all of us have our colonies so well-prepared in a timely way. Those colonies that aren't in good shape (by indications described above) may be at high risk for failure if their beekeepers are not soon taking action: the clock is ticking. If you have a failing queen after August, it may already be too late to save the colony, since those who raise/sell productive queens are quickly winding down their season during August and most hives in NC show very little interest after July in raising a productive queen on their own. Colonies with failing queens during summer are unlikely to survive fall and winter if they are not combined with another queenright colony unless the beekeeper is very lucky or very persuasive in acquiring a queen and additional brood.

Varroa mite control is also critical to colony survival these days. Because in much of our state the winter bees are starting to develop during September, honey bee colonies with unchecked varroa levels during summer and fall may be already doomed before winter: the parasitic effects of varroa (including deadly virus transmission) often shorten the lifespan of winter bees, and the queen bee is not going to increase egg-laying before mid-winter to make up for that. This is the most common reason for the scenario in which the adult bee population shrinks significantly before late January and

those who are left freeze to death on a cold winter night because they didn't have enough adults to generate life-saving heat for themselves. Check out the [www.honeybeehealthcoalition.org](http://www.honeybeehealthcoalition.org) website for excellent videos/info about varroa control.

Food supply is generally the easiest issue of fall/winter hive management to correct. Pollen is typically available naturally in adequate amounts during the fall, so no supplements should be needed for most colonies. If NC beehives have at least 60 pounds of honey in them by early October, they *might* be okay, especially if the fall nectar flow (which usually occurs during October but in unpredictable and usually small amounts) is substantial. Consider supplementing your colonies with sugar syrup at a 2:1 (sugar: water) concentration so that they can easily store those carbohydrates for their overwinter needs. If your colonies don't have at least 60 pounds of honey still in them by early November, they're very likely to need feeding in order to prevent total starvation before March. For most beekeepers, it is easier to feed liquid carbohydrates when temperatures are still above 50°F than it is to scramble with trying to feed a starving colony during the colder days and nights of mid-winter.

For our state's honey bees, autumn is "make it or break it" time: too little too late = hive loss.

### Know Your Numbers!



A deep frame can contain 3500 to 4500 cells per side depending upon cell size and manufacturer. A medium frame can contain 2300 to 3100 per side. This information might be used to estimate the population levels your queen can provide as her offspring transition from summer to winter bees.

# Wolfpack's Waggle: The NC State Apiculture Program Has Moved, But You Won't Know the Difference

by Dr. David Tarpy

Department of Entomology & Plant Pathology, NC State University



NORTH CAROLINA STATE UNIVERSITY  
**APICULTURE PROGRAM**

**It is often said** that the only constant thing in life is change...

The Apiculture Program at NC State traces back well over 100 years, and during that time it has gone through many evolutions. It started in 1913 with a gentleman hired by the USDA named George H. Rea, but he remained only one year and was replaced by C. L. Sams, Frank Meacham, and W. A. Stephen through 1965. The modern era of the program began in 1974 with the hiring of John Ambrose as the first full-time apiculturist, and the position continues through today.

Universities are, of course, comprised of different colleges (e.g., College of Engineering, College of Veterinary Medicine), and our program has always been part of the College of Agriculture & Life Sciences (CALS). Colleges, then, are structured into any number of different Departments, each with 5-75 different faculty programs. In 2013, NC State University underwent a major reorganization, where the College of Physical & Mathematical Sciences (PAMS) merged with parts of CALS to form an entirely new College of Sciences. CALS, however, remained intact although many faculty members, departments, and programs were reshuffled. In 2016, CALS itself underwent a major reorganization, where 16 departments were restructured into 12 through several mergers. Importantly, the Department of Entomology (where our program was housed) was merged with Plant Pathology to create the Department of Entomology & Plant Pathology (DEPP), which now has ~50 faculty.

Apiculture has always been on the fringe of Entomology as a discipline since most entomologists study insect pests worthy of exterminating. The merger with Plant Pathology made our program even more of a minority of one, since now most of the students and research in the department was geared towards eradicating some sort of pestilence in cropping systems. As such, our students and other program members were having a difficult time assimilating and taking courses, since they were more interested in honey bees and how to keep them healthy in a complex world.

As a result of these and other factors, as of July 1, 2021, our program has officially moved to the Department of Applied Ecology from DEPP. As such, we

are now housed in a department that has an undergraduate teaching major and other faculty programs in pollinator biology. Despite moving “on paper,” pretty much nothing else has changed: we are housed still in the same on-campus lab and office space, I teach the same courses on bees and beekeeping, and (critically) the program has retained the same personnel. The upsides have been notable, including a new temporary field research laboratory since our previous building was condemned last fall, as well as a more appropriate curriculum for any future graduate students studying honey bees and other beneficial insects.

So while the NC State Apiculture Program might have moved departments, we have retained the same responsibilities in research, extension, and teaching. We will continue to offer online courses through our Beekeeper Education & Engagement System (BEES), provide services in our Queen & Disease Clinic, and holding any number of different extension trainings including our next ‘Intermediate’ BEES Academy in Monroe NC (Oct 2-3). So, rest assured, while things may change, in this case they have pretty much stayed the same.

## Know Your Numbers!



A quart jar will hold approximately 3 pounds of honey or 1361 grams.

One pound of honey weighs approximately 454 grams. Both pounds/ounces and grams should be included on your honey bottle label. If you are looking for a good article about the make-up of honey, look on the internet for Bee Cultures “The Chemistry of Honey” July 25, 2016..





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### NCSBA Library Update

#### Increase in DVD check-outs!

Dr. Aletha Andrew and her staff manage the NCSBA Fred Deer Collection at the Clyde A. Erwin, Jr. Library at Wayne Community College in Goldsboro. She told me that there has been an increase in the number of people checking out DVDs from the collection. That always pleases me.

Speaking of videos, I watched *Keepers of the Bees* on PBS on the first of July. That had been shown at the last NCSBA conference and now, on public television. It is an excellent program featuring many people you know, and it is about the NCSBA and beekeeping in North Carolina. We are currently trying to obtain a copy for the library to have in the archives and that also may be checked out.

Another new local book- *A Swarm in May* - by Dr. Mark Powers has arrived at the library. As you remember, books must have a library catalog code and that is done in Raleigh. With all that is going on, the coding in Raleigh is backed up... a lot! So, it will be quite a while before the book is available through library-to-library loan and that is done through your local library not through the Fred Deer Collection of DVDs.

Do you have a favorite DVD that you would like to comment about? Send me an email!

Also, due to some recent concerns, patrons will be limited to checking out one DVD at a time.

Bob Kemper, NCSBA Fred Deer Librarian

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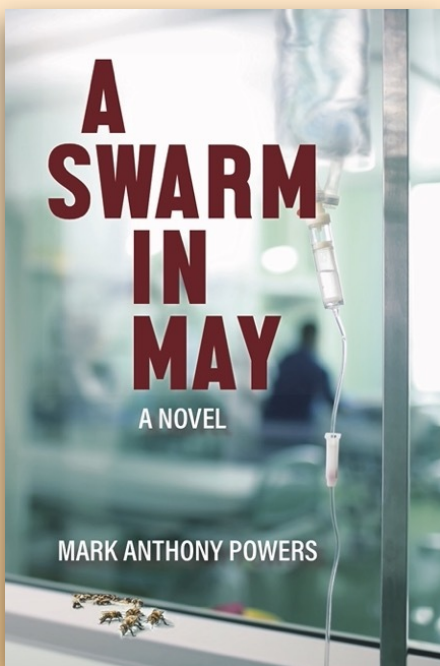


# In the Spotlight

## Beekeeping Key Plot Element in New Medical Mystery

As a retired physician and Duke University Medical School Associate Professor Emeritus, Mark Anthony Powers followed the usual dictum about writing what he knows about with his first published book.

*A Swarm in May: A Novel* (Hawksbill Press) was inspired by his medical experiences (and that of other doctors, including physicians of color), his forty-four years living in North Carolina where the novel takes place, his years coaching Little League baseball, his vivid imagination, and his love of bees.



Set in 1998, *A Swarm in May* tells the story of Phineas Mann, an intensive care physician, gardener, and beekeeper whose busy life is upended when he is asked to take care of a critically ill unvaccinated elderly man with a life-threatening case of tetanus. Complicating matters is the patient's racist son, who abuses and threatens Dr. Mann, his Black intern, other medical colleagues, and family members of the Black patient in the next intensive care unit room. When the elderly patient with tetanus suffers repeated severe and unexplained setbacks, his son's threats escalate and extend to Phineas and his family. Dark forces then enter from Dr. Mann's long forgotten past, while he

attempts to solve the novel's central medical mystery and to keep all those around him safe.

The book's title suggests that honey bees are featured in the story. They are! Mark imparts knowledge of their biology and social behavior through Phineas Mann, who mentors his cantankerous pre-adolescent son in the art of beekeeping after a swarm of bees bivouacs on their deck. And that's not the last the reader hears of these spicy bees.

For more information about this entertaining summer read, please visit [www.aswarminmay.com](http://www.aswarminmay.com).

**About the Author:** Mark Anthony Powers grew up in the small town of West Lebanon, N. H. before he received his B.S. from Cornell and his M.D. from Dartmouth. He came south for his internship and residency in internal medicine at the University of North Carolina, followed by a fellowship in pulmonary diseases and critical care medicine. After almost 40 years in clinical practice and teaching, he retired from Duke University and was finally able to find the time to begin a deeper exploration of other parts of his brain. There he found embers still smoldering from creative writing courses he took way back in college. He has since gently fanned these glowing coals into works of fiction that he regularly workshops with other novelists. He has also enjoyed taking a wide variety of classes through Duke's Osher Lifelong Learning Institute, gardening at home and with Durham's Master Gardener Volunteers, and tending his bee colonies.

Mark has been a member of the North Carolina State Beekeepers Association and the Orange County Beekeepers Association since 2013. He is a past president of OCBA and recently achieved certification as a Master Beekeeper. He has published in the *American Bee Journal* and was awarded a blue ribbon at a state NCSBA meeting for his photo, which then became a *Bee Buzz* cover (Summer 2018). His honey entrees have, alas, only won Seconds and Thirds. In addition to his backyard apiary, he helps manage bees at Durham's Briggs Avenue Community Garden, where he has had the privilege of teaching beekeeping to Durham Technical Institute students.



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# Johnston County Beekeepers Association

## PURPLE BROOD - BEE BUZZ BULLETIN

Prepared by John Converse & Phil Crump

### ***Hive Inspection (John Converse):***

During an inspection of a member's hive, I noticed that the capped brood was an unusually dark.



### **Note the dark capped brood.**

*(Photos 1-3 by John Converse June 29th approximately 5 PM.)*

I determined what I was seeing was not American foulbrood, European foulbrood, sacbrood, or chalkbrood. I had no idea for the cause of this condition, so I spoke with Ron Lassiter, who is a very experienced member of the Johnson County Beekeepers Association. After reviewing the pictures, he suggested I call Adolphus Leonard, who is the State Apiary Inspector for our area.

I emailed photos to Adolphus. After reviewing the photos he replied, "It could be at least two things, one viral, the other not. Your other colonies are not in particular peril." Three days later, Adolphus inspected the hives on Friday July 2nd. He indicated that cause of this condition was from the nectar that the bees were harvesting. The purple brood is caused by the plant "swamp titi" (*Cyrilla racemiflora*). Another name for this plant is "summer titi". (Note that the potential viral cause would have been black queen disease).

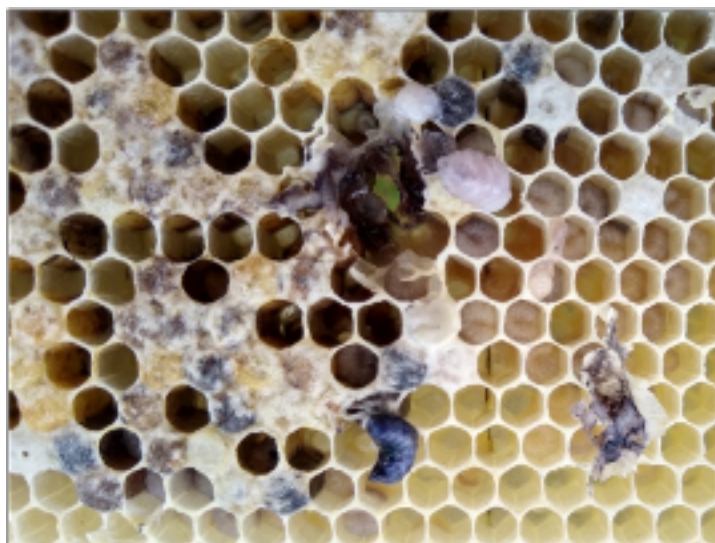
According to Gardening Know How, "Summer titi's fragrant blooms are attractive to honeybees, but the plant is associated with purple brood, a condition that can be fatal to larvae that eat the nectar or honey." (Some publications will call it blue brood.)

Adolphus recommended putting on a sugar water feed to help dilute the nectar or honey being fed to the brood. He said this situation usually only affects one brood cycle and that many of the larvae live to become adult bees. He indicated that clear cutting in the landscape encourages the growth of summer titi, creating a problem for beekeepers.

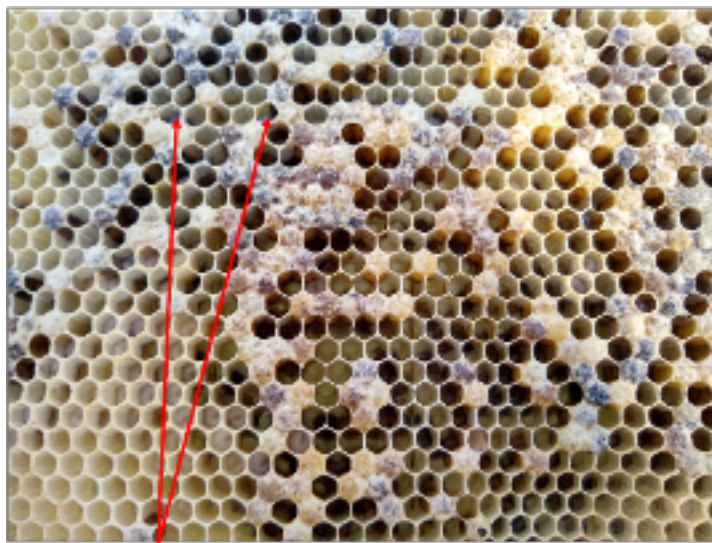
Inspection of the two other hives at this location found a small number of affected larvae (2-3 cells on each side of a frame). These hives had been requeened and were being fed sugar water to help build up the hives. The sugar water evidently limited the effect of the toxic nectar on these hives.



Here are some close-up images of the frames I observed:



**Note the dark (purple/blue) larvae.**



**Note: Some the uncapped larvae are dark colored.**

### ***Plant Background (Phil Crump):***

First, and most importantly, this condition is not a disease, but actually a poisoning, due to the concentration of alkaloids in the nectar. Also, the adult bees are not affected by the nectar from this plant.

*Cyrilla racemiflora* is known by multiple common names, including swamp titi, summer titi, American titi, American Cyrilla, swamp Cyrilla, black titi, red titi, burnwood bark, leatherwood, Palo Colorado, and titi. It is important to know that there are other species of plants that are called “titi”, including spring titi (*Cliftonia monophylla*), that are not toxic to our bees and a good nectar source.



*Cyrilla racemiflora* (Photo: USDA-NRCS PLANTS Database)

*Cyrilla racemiflora* is usually an evergreen, semi-evergreen, or sometimes deciduous plant found in the coastal and piedmont regions of North Carolina and across the southeastern US from VA to TX. This plant typically grows as a shrub to a height of between 8' to 12', but can become a small tree at 20'. It can form thickets and usually prefers wet or damp sites. Its showy white blooms appear in May, June, and July in North Carolina. The bark on the contorted young stems is cinnamon colored and has a flaky appearance with maturity. In the autumn the leaves turn an orange-red color.

### **General Comments:**

It is important to take a systematic approach to unusual hive problems. Ask for help from more experienced club members or your regional state apiary inspector. In this case action was required to mitigate the effects of the toxic alkaloids in the nectar.

We would like to thank Greg Wolgemuth for recommending we publish this article.



# How To Combine Weak Colonies Using the Newspaper Method

By Darryl Gabritsch NC Master Beekeeper



## Why would you need to combine colonies?

Consider combining colonies when one or more of the following conditions exists:

- You have a weak colony that is not improving, no matter what you have tried – such as boosting the colony with brood and nurse bees from a strong colony, treating for mites, and inspecting for diseases such as Nosema, parasitic mite syndrome, etc.

- The colony lost a queen and you don't want to put a new queen in the weak colony.

- You did a queen cell split, equal split, or walk-away split and the queen never emerged, thereby leaving the colony queenless for up to a couple of weeks. Remember that open brood and mated queens release pheromones that suppress worker ovary production. A colony can get laying workers generally in about three weeks if left queenless and without open brood (they don't read our books, so the timeframe varies).

- It is late in the season, around the fall, and you want to combine weak colonies to form one strong colony to go through the winter.

## Combine the colonies. This is a fairly easy process:

a. Move the weaker colony adjacent to the stronger colony.



Figure 1

b. Open the strong colony and place a single layer of newspaper sheet(s) on top of the frames (Fig. 1). You



Figure 2

may have to weigh down the newspaper with hive tools if the wind is blowing.

c. Make slits in the newspaper (Fig. 2) to give the honey bees a head-start on chewing through the newspaper and to allow the colony smells to merge. The purpose of the newspaper is to allow the colony scents to merge and slowly acclimatize the bees to each other.

**Note:** An alternate method is to put an empty hive body on top of the newspaper and then make the slits in the newspaper.



Figure 3



d. Put the hive body containing the weak colony on top of the newspaper (Fig. 3). If you put an empty box on top of the newspaper before making the slits you can simply transfer the frames from the weak colony to the empty box on top of the newspaper. The weak colony should ALWAYS be placed on top of the strong colony. The strong colony population will continue to go out to forage; thereby decreasing the number of bees inside the lower box during the day which increases the chances of a successful combination of the colonies. Some beekeepers will tell you to pinch and kill or remove one of the queens before combining the colonies. Others will tell you to simply combine the colonies and let the bees figure out which queen they want to keep. I do all of my combinations by letting them figure out which queen to keep. They know which is the better queen. Note: It is normal to only combine two colonies; however, combining three very weak colonies into one colony (Fig. 4) has been successfully done when two of the weak colonies were queenless, for example, after failed queen cell splits.



Figure 4

e. Put the top cover on, weight it down with a brick, and remove any equipment from the weaker colony.

**Conduct a follow-up inspection. Leave the hive alone for at least three days, then open and inspect it to ensure the colony has been combined.**

a. Look for a mated queen, or evidence of a mated queen. You should see eggs or the queen.

b. Add brood and eggs from another strong colony if you don't see evidence of the queen. The bees may have fatally struck both queens if you combined colonies without killing or removing one of the queens. Adding eggs allows the bees to make emergency queens if needed.

c. Remove all paper scraps. Greater wax moth (*Galleria mellonella*) larvae can hide in the newspaper scraps (Fig. 5).



Figure 5

Step back and pat yourself on the back for a job well done! It really is that simple to combine colonies.

*This article is a reprint from the June 2020 American Bee Journal.*



# NCSBA 2021 Meeting

## November 19-20

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## ~ Featured Speakers ~



**Scott McArt** is an assistant professor of pollinator health who helps run the Dyce Lab for Honey Bee Studies at Cornell University in Ithaca, New York. He is particularly interested in scientific research that can inform management decisions by beekeepers, growers, regulatory agencies, and the public. Research in the McArt lab focuses on the impact of pesticides, pathogens, habitat, and management practices on the health of honey bees and wild pollinators.

**Octavio Vazquez** is an apiary specialist in commercial nuc production & queen production for Kutik's Everything Bees in Manning, SC. Family owned and operated since 1978, Kutik's moved colonies to South Carolina from their headquarters in Oxford, NY after recognizing the difficulties of overwintering honey bees in update NY. Each spring many of the hives are brought back to New York for apple crop pollination in the Lake Ontario orchard belt, then to honey production locations in the Mohawk Valley region. Their extraction and bottling operation began in 1979. Kutik's Everything Bees began offering pollination services for cantaloupe, watermelon, and squash in 2001.







**Lexi Hoopman** is a fourth year PhD candidate at the University of North Carolina at Greensboro. She completed her Bachelor's degree in biology with minors in chemistry and psychology from North Dakota State University before moving to North Carolina to start her PhD with Dr. Kasie Raymann. Lexi's dissertation research, titled *The Unintended Antibiotic Target: Honey Bee Microbiomes and Fertility*, investigates how antibiotic use in hives could affect the honey bee's microbiomes and reproductive health. Recently, she has been awarded a prestigious predoctoral fellowship from the National Institute of Food Agriculture in the United States Department of Agriculture to fund her research efforts. Lexi has also been named the North Carolina Honey Bee Student Researcher of the Year and serves as Vice President in UNCG's Graduate Student Association.

**Dr. Frank D. Rinkevich** is a Research Entomologist at the USDA-ARS Honey Bee Breeding, Genetics, and Physiology Laboratory in Baton Rouge LA. Frank has extensive training in insect toxicology, biochemistry, molecular biology, and genetics. The goal of Dr. Rinkevich's research is to provide a basic understanding of insecticide toxicology that is relevant to field conditions in the commercial beekeeping industry. Current research interests in Dr. Rinkevich's lab include evaluating the effects of pesticide exposure on colony survivorship in commercial beekeeping operations, assessing the capacity and dynamics of metabolic detoxification of insecticides, understanding the genetic, behavioral, and social factors that affect insecticide sensitivity, determining the breadth, depth, and mechanisms of amitraz resistance in *Varroa*, and establishing the effects of fungicides on colony health.



**Eric Talley** is an NCSBA Master Level Beekeeper completing his Master Craftsman research project and will present his project & results to the membership. Eric started beekeeping as a Future Farmers of America project in 1973 while in high school. Four years later, Eric gave his 5 colonies to the only other beekeeper in the FFA when he left for the US Marine Corps. After retiring from the Marine Corps, Eric again picked up the beekeeping bug and has kept bees along the NC coast since 2008. Eric is a queen producer, raising and selling VSH queens. Today he manages about fifty 10-frame colonies and 100 mating colonies. He is currently working on completing his Master Craftsman certification.

Other possible speakers to be determined. Please visit [ncbeekeepers.org](http://ncbeekeepers.org) for updates.

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# The Honey Bee Garden is Open!



The Honey Bee Garden is open at the North Carolina Zoo and ready for established volunteers who are excited to share the world of honey bees to guests. This includes the use of props, such as the provided hive components, photo posters and beekeeper tools. Beekeeper volunteers that also want to sell honey may do so following the conventional guidelines. Please contact Phil Uptmor at [puptmor@gmail.com](mailto:puptmor@gmail.com) for questions about volunteering at the Honey Bee Garden.

There is currently no class for new volunteers scheduled for 2021 but volunteer training will start back in the Spring of 2022. Please look at the NC Zoo volunteer website for more information: <https://www.nczoo.org/volunteer>.





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# Queen Rearing With a Double Screen Board

by Brian Carlton NC Certified Beekeeper

**Anyone with a few hives** and the right equipment can successfully rear their own queens. It may seem like a daunting task at first but once you understand the mechanics of it all, it is not difficult. With a little practice, you will be rearing your own queens in no time. I am entering my third season of beekeeping, and I love having a steady flow of new queens.

The first step is to pick the best queen in your bee yard and designate that colony your breeder hive. She should possess the traits you're looking for, such as a good temperament, disease resistance, productivity, etc. You will also need one large 10-frame double-deep (or 8-frame medium equivalent) colony for a cell starter/finisher hive, and one colony from which to harvest nurse bees. Having a few additional colonies from which to make splits is a plus.

## Equipment needed:

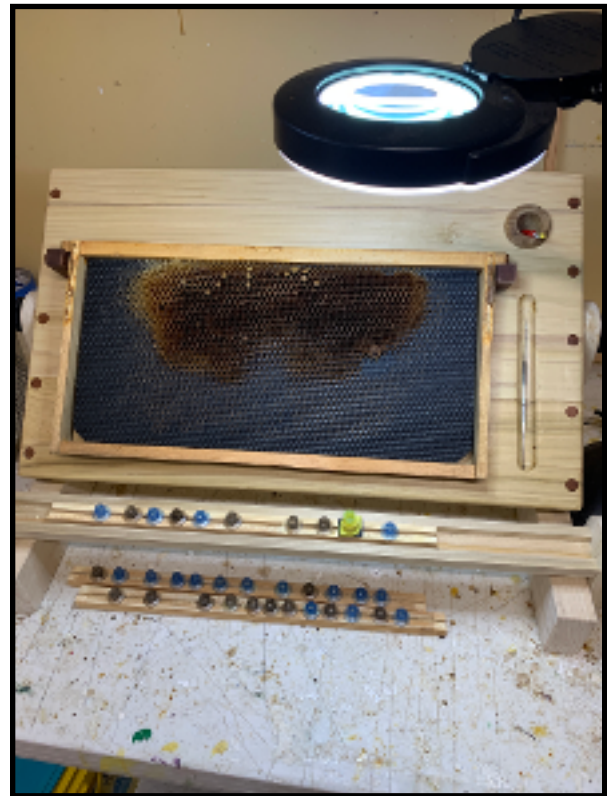
**Double-screen board.** You will need a double-screen board with a 1-inch-deep rim, open in the center. The opening is covered with screens on both sides so that bees on one side of the board cannot contact bees on the other side of the board. One side of the board has a separate entrance.



*Double screened board used in queen rearing*

**Grafting tool.** There are several styles of grafting tools, but I prefer the Chinese grafting tool because it has a flexible head that easily slides under the larva to scoop it out of the cell. The tool is spring-loaded to delicately remove the larva and place it safely into the cell cup. (see grafting photo on next page)

**Grafting stand.** You will need to fashion some sort of grafting stand to hold your frame of larvae.



*This is my grafting set-up, which includes a grafting stand and lighted magnifying glass*

**Magnifying glass.** Optional, depending on your eyesight. I use a lamp with a magnifying glass built into the head that I can swivel around as needed.

**Grafting frame with cell cups.** A grafting frame will hold the newly grafted larvae. Grafting equipment, including cell cups, are readily available for purchase at many beekeeping suppliers.



*A grafting frame with queen cups*

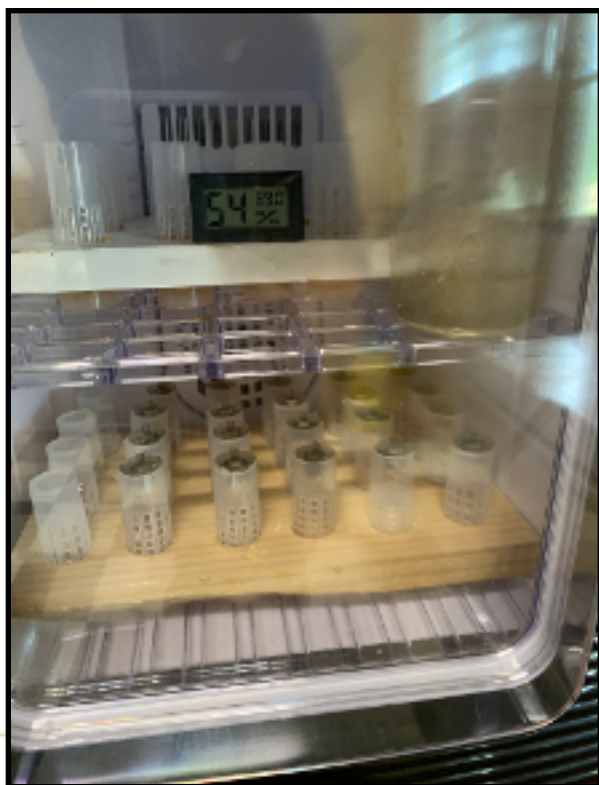


**Mating nucs.** Once your queens emerge you will need some sort of mating nuc to get the queens properly mated, and in which to store them until needed. I use mini nucs, 2-frame nucs, and 3-frame nucs, depending on the length of time I plan to store the queen: minis for selling the queens, 2- and 3-framers for making splits (new nucs).



*Mating Nucs*

**Incubator (optional).** The use of an incubator will allow you extra time to make up the mating nucs. You can place the cells in hairpin roller cages, inside an incubator set to 93°F. Release the virgin queen directly into the mating nucs once they are set up, or just prior to emergence. This step is not totally necessary, as you can put the cells straight into the mating nucs if there are enough bees to keep them warm. A queen pheromone strip helps keep the bees in the box.



*An incubator is the costliest piece of equipment used in queen rearing. Though optional, it may be a good investment if you plan on rearing a lot of queens.*

Now that you have everything together, let's get started! The following are steps that I follow when raising my own queens:

**Step 1:** The first thing to do is to find and cage the queen in your cell starter/finisher hive. Put all the brood frames that have eggs and larvae young enough to produce cells in the top deep box with the queen. These larvae will be in uncapped cells and are very tiny relative to the other uncapped larvae (see Step 3). In the bottom deep box, place all the capped brood (with no eggs or young larvae capable of producing queen cells), pollen frames, and honey frames. Make sure to leave space for the grafting frame.

**Step 2:** Now place the double screen board onto the bottom box. If a nectar flow is on you can add a honey super first. Position the entrance of the double screen board to the back. Now place the box containing the queen on top. The bottom box is now queenless, and the bees will soon know it.

**Step 3:** Next, find a frame from your donor hive that has very young larvae in the milk brood stage. You will want to graft larvae that are around 12 hours old. These will be the smallest larvae you can see. They are in the shape of a "comma" and are very tiny, not much larger than an egg. They will be floating in a pool of royal jelly and may be difficult to see without a good light and a magnifying glass. Don't make the mistake of grafting larvae that are past this stage, as they are too old at that point. Keep a moist towel over the cell bars until you place the frame into the hive.



*Larvae used for grafting should be around 12 hours old*

**Step 4:** Once you have the grafting frame prepared, carefully place it in the open spot in the bottom box. This should occur around 30 minutes after splitting the hive. The bees now know they are queenless and will pounce on your grafts with glee. If you wait a day, I have found they will draw out any larvae on the brood frames that you may have missed.



**Step 5:** Twenty-four hours later, disassemble the hive. Leave the box with all the capped brood on the bottom with the queen excluder and the box containing the queen on top. Make sure to leave a frame or two of empty drawn comb in which the queen can lay eggs.

**Step 6:** Next comes the box with all the open brood and our grafting frame. The bees will carry on finishing the cells as they care for the open brood. Remove the frame of cells after they are capped on Day 8 of development from the egg stage and reassemble the hive minus the queen excluder. You could leave them inside their cages until they are almost done but doing so may risk putting them into swarm mode from brood nest congestion.

**Step 7:** I put my cells in the incubator until Day 16, then place each one inside a stocked mating nuc. From there on it's up to the bees to get the queen mated. The success rate varies depending on the time of year, and the size of your mating nuc.

Learning how to graft your own queens is a great way to become more self-sufficient in your beekeeping operation. Having access to new queens when you need them is highly beneficial.



**NCSBA hosts a workshop on queen rearing called the Born and Bred Queen Rearing Workshop. The workshop is currently on hold but be sure to keep an eye out for this excellent learning opportunity in the future.**

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**It's Fair Season** in North Carolina! Now is your chance to show off the fruits of your labor (and your bees' labor) by entering the Bees and Honey competitions at the NC State Fair in Raleigh (Oct. 14-24). The deadline for entering competitions is September 15th so don't delay! Hopefully you already entered competitions at the Mountain State Fair in Fletcher (Sept. 10-19) and the Carolina Classic Fair in Winston-Salem (Oct. 1-10) as the competition deadlines have already passed. However, you can still support your fellow beekeepers by visiting the Bees and Honey displays of all three of these great events and please, volunteer where needed!







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