



### Hive Vibes

Meeting the First Monday of Each Month  
 7 p.m. at Mountain Folk Center (formerly Industrial Park)  
 65 Folk Center Circle, Murphy, NC 28906  
[www.AppalachianBeekeepers.com](http://www.AppalachianBeekeepers.com)



Welcome to the height of the beekeeping season!

June is the spring honey harvest, the beginning of the sourwood nectar flow, still the time to watch out for swarms, and is still a good time to start nucs to have extra queens on-hand in case something goes wrong in one of your hives. Lots to do.

Since tulip poplar can make up a significant portion of the spring honey many of us will be harvesting within the next two weeks, I thought I would share some fun facts about the tulip poplar:

- The tulip poplar is the state tree of Kentucky, Indiana, and Tennessee.
- It is actually a member of the magnolia family rather than the poplar family.
- The tree typically does not produce blooms on its branches until it is 15 years old (do flowers bloom along the trunk before that?).
- A tulip poplar's average lifespan is between 200-250 years.

- The tree is quite vertical – growing to heights of 100-150 feet with the first branch often 50 feet above the ground.

We had a bit of discussion on comb honey at the June meeting. If the bees have finished any of the comb honey frames I gave them a few weeks ago, I'll bring a frame to the next meeting and perhaps we can do a little hands-on with comb honey.

In July we will also try to have another day when a club member hosts an inspection or tour of their bee yard so some of our newbees and wannabees can see a variety of set-ups and approaches. Also, any experienced club member who would be interested in helping newbees extract honey, please shoot me a quick email so I know who else can help. We usually have a number of people asking around this time of year.

Our next meeting will be July 7<sup>th</sup>, 2014 – after the 4<sup>th</sup> of July. Hopefully we all will have good tales to tell of a strong nectar flow.

*Zack*

**Secretary's Minutes** – Secretary was not present, therefore, no minutes were read.



**Treasurer's Report** – The Treasurer's report was given by Fred Bernhardt. .. The current balance is \$669.32.

**Treasurer's Note:** I have signed up for "e-statements" to avoid the \$3 charge our bank plans to implement. I will now print out each month's statement for the club records. *Joyce*

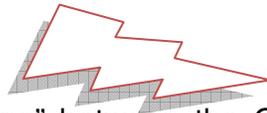
## DOOR PRIZES:

Name	Prize
Gail Dean	Honey-bee-healthy
Mike Dilbeck	\$10 Gift Card from Wayne's
Peter Goundry	Beetle trap
Sheila Gooch	Frame Savers
David Newman	Book (novel)

**Note:** The July meeting will be my last meeting as the "Door Prize Committee." If someone would like to step up for the job, please let Zack know. *Fred*



**Next Meeting**—Our next meeting will be July 7 at the Mountain Folk Center at 7:00 p.m.



In an effort to increase "information sharing" between the Georgia Mountain Beekeepers and the Appalachian Beekeepers, Glen Henderson will begin emailing his "Bee Chronicles" directly to our members.

### ***Nectar: A sweet reward from plants to attract pollinators***

Flowering plants need sugar transporter SWEET9 for nectar production.



Evolution is based on diversity, and sexual reproduction is key to creating a diverse population that secures competitiveness in nature. Plants, as largely immobile organisms, had to solve a problem: they needed to find ways to spread their genetic material beyond individual flowers. To make sure that flying pollinators such as insects, birds and bats come to the flowers to pick up pollen, plants evolved special organs, the nectaries, to attract and reward the animals.

Scientists from the Max Planck Institute for Chemical Ecology in Jena (Germany) and their colleagues from Stanford and Duluth (USA) have identified the sugar transporter that plays a key role in plants' nectar production. SWEET9 transports sugar into extracellular areas of the nectaries where nectar is secreted. Thus, SWEET9 may have been crucial for the evolution of flowering plants that attract and reward pollinators with sweet nectar.

(*Nature*, March 16, 2014, doi: 10.1038/nature13082)





### An Ittsy, Bittsy Spider

The venom from a deadly Australian spider offers promise of a new bio-pesticide that kills key insect pests but leaves honey bees unharmed.

The insect-specific Hv1a/GNA fusion protein bio-pesticide is a combination of a natural toxin from the venom of the funnel web spider and snowdrop lectin.

Researchers at Newcastle University in the United Kingdom says feeding acute and chronic doses to honeybees – beyond the levels they would ever experience in the field – had only a very slight effect on the bees' survival and no measurable effect at all on their learning and memory.

Publishing their findings in the journal *Proceedings of the Royal Society B*, the researchers say the insect-specific compound

has huge potential as an environmentally-benign, bee-safe bio-pesticide and an alternative to the chemical neonicotinoid pesticides which have been linked to declines in pollinator populations.

Prof. Angharad Gatehouse of the Newcastle's School of Biology says the university's findings suggest that Hv1a/GNA is unlikely to cause any detrimental effects on honeybees. "Previous studies have already shown that it is safe for higher animals, which means it has real potential as a pesticide and offers us a safe alternative to some of those currently on the market," he says.

### CATCH THE BUZZ

By David O'Brochta

A breakthrough in the efforts to genetically modify honey bees was recently reported by Christina Schulte and colleagues from Heinrich Heine University in the *Proceedings of the National Academy of Sciences of the United States of America*.

Schulte et al, reported the creation of a honey bee containing a "foreign" gene — in this case, one that made some of the cells in the bee glow. This is a first in bee research. These researchers did not establish a colony of genetically-modified bees; they only showed that genetically-manipulated queens could produce genetically-modified drones in the lab. It was a proof of concept.

We have known the genome sequence of the honey bee, *Apis mellifera*, since 2006. The bee genome helps bee biologists learn how honey bees tick, and it has already provided insights.

The genome is rich in genes associated with smell, but it has relatively fewer genes associated with taste and immune functions, reflecting evolutionary adaptations associated with their unique lifestyle.

Using genetic technologies in the laboratory to actually manipulate the bee genome in living bees will lead to deeper insights, such as how they fight infections like foulbrood disease or parasites like *Varroa* mites, as well as the genetic basis for bee behavior.

Imagine you know a little bit about cars and you want to figure out what makes them run. A manual is available, but it's in some kind of code. One approach would be to take a hammer and, starting with one part at a time, break things and then see how the "mutated" car functions.

“Oh look, now it doesn’t start — that must be a starter thingy,” you might

deduce. “Now all the lights and the radio don’t work — that must be an electrical thingamabob.” And so on. Pretty soon you would know a lot about how the car works and the role of many of its parts, and the coded manual would make more sense too.

This is pretty much how geneticists might approach the problem of understanding how bees function. Geneticists would not use a hammer, but they would use genetic technologies to manipulate the genome of living bees to see how those alterations affected the organism. Today there are many technologies that enable scientists to insert genes into chromosomes. In the case of bees, applying those technologies has proven very difficult. This is because insect-genome-modification technologies require physically injecting these technologies (usually bits of DNA) into honey bee eggs, having the eggs hatch and develop into fertile queens, and then getting the queens to reproduce. However, bees do not like having their eggs injected.

The key to Schulte et al’s success was their

innovative approaches to manipulating and

controlling bee reproduction and behavior in the laboratory so they could successfully inject their eggs. They have forged an important path that others can follow, albeit a challenging one. Just as the human genome enables human biology to be understood for the purposes of developing therapeutics and solutions to unwanted conditions, these results represent the beginning of a similar phase of bee research.

*David O’Brochta is the director of the [Insect Genetic Technology Research Coordination Network \(IGTRCN\)](#) and is a professor in the [Department of Entomology](#) and the [Institute for Bioscience and Biotechnology Research](#) at the University of Maryland, College Park. He has an active research laboratory focused on insect genetics and molecular genetics with interests in the development of insect genetic technologies. Professor O’Brochta teaches at the undergraduate and graduate levels, is the Head of the Institute for Bioscience and Biotechnology Research’s Insect Transformation Facility, and he is the editor of the Royal Entomological Society’s journal *Insect Molecular Biology*.*

## Officers

**President**  
**Secretary**

Zack Stockbridge  
Kay Cameron

**Vice President**  
**Treasurer**

Larry Stalcup  
Joyce Bernhardt



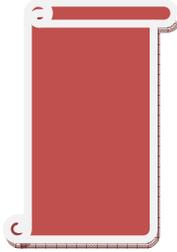
“This is a special time of the year for beekeepers in Western North Carolina. It is the time they prepare for the sourwood honey flow.” *Zack Stockbridge*

Let's try to patronize member-owned businesses and local supportive businesses whenever possible.

	<p><b>Andrews Veterinary Hospital</b></p>	<p>David Ackerman</p>	<p>1575 Main St., Andrews, NC</p>	<p>828/321-3316</p>
	<p>Candy Mountain Farm</p>	<p>The Juhlines</p>	<p>Candy Mountain Heights, Murphy, NC</p>	<p>828/494-2083</p>
	<p>135 Mi-Po Tree Service</p>	<p>The Popes</p>	<p>Murphy, NC 28906</p>	<p>828/644-5405</p>
	<p><b>Shadow Ridge Bee Farm</b></p>	<p>Harold &amp; Becka Watkins</p>	<p>Mineral Bluff, GA 30559</p>	<p>706-994-4175 706-374-0409</p>
	<p>Stockbridge Farm</p>	<p>Jen &amp; Zack Stockbridge</p>	<p>Andrews, NC</p>	<p>828/321-2171</p>
	<p>Wayne's Feed Store</p>		<p>869 Andrews Rd, Murphy, NC</p>	<p>828/837-2139</p>

# Newsletter of the Appalachian Beekeepers

If you have an interest in bees/beekeeping, we hope you will join us and enjoy meeting and talking with others who share your interest.



## Membership Application For Appalachian Beekeepers

Date: \_\_\_\_\_ Individual/Family-\$12

Name \_\_\_\_\_

Address \_\_\_\_\_

City, State, Zip \_\_\_\_\_

Phone \_\_\_\_\_ Cell \_\_\_\_\_

E-Mail \_\_\_\_\_

How did you hear about our Club? \_\_\_\_\_

\_\_\_\_\_

Mail to:  
Joyce Bernhardt, 325 Rolling Oaks Rd., Murphy, NC 28906



### **RECEIPT**

Date \_\_\_\_\_ Amount \$ \_\_\_\_\_

Received from \_\_\_\_\_

For Membership dues prorated from date above to following April 1.

Signed: \_\_\_\_\_