



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

President's Corner

We had a good November meeting as we wrapped up the year and began looking forward to 2015. Elections went pretty much as expected. Zack will serve another year as President, Tom Handford is now Vice President (un-opposed in elections), and Joyce Bernhardt remains the Treasurer with Fred as her official Emissary. However, we do still have a need for a new Secretary! No one stepped forward at the meeting. Therefore we will tap someone in February.

There are a number of things we decided to do for next year:

Basic Bee School (2nd Annual) in early March. The club has reserved a few packages from Wayne's which will be available only to Bee School attendees (more on that later).

It is time for us to look for a new Protégé because Brionna has completed two years – she's

“graduating”! We will still help her with mentoring, but she will not be our official Protégé anymore. **Perhaps we should give her a new title? ?** Keep your ears open for potential candidates (middle school-age is the youngest we can go). Get their info and encourage them to attend our 1st 2015 meeting (Feb 2nd) since attendance is a requirement of the Protégé Program anyways.

We are going to have a Club Hive at the Folk Center next season! The purpose is to have a hive available to teach out of. This will allow us to be hands-on at any evening (weather permitting). We will start the hive from a package and install it as our first demo in 2015.

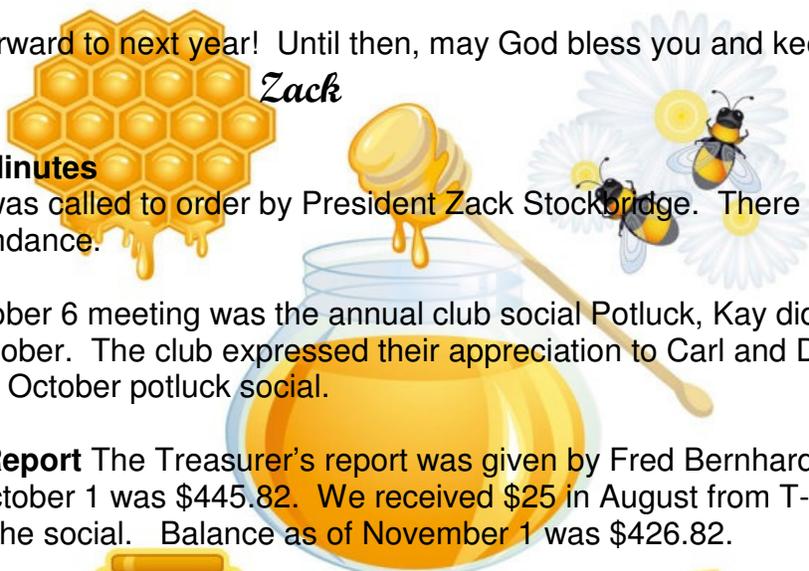
I (Zack) am going to host a demo/workshop day in mid-April on How to Start a Nuc. The principles are very easy, but people feel more comfortable when they get to actually watch it being done. God-willing, I will have enough survivor hives for us to start several nucs that day.

*

There might be a club-scale local, survivor bees/queens project. There are several ways we could go about this; it could be big and involve grafting or it could be small and “less complicated”. Expect a lot more discussion at the March 2015 meeting. Contact me if you think you might want to help with this and I will send you a few articles to read and videos to watch.

- [Shadow Ridge Bee Farm](#) (Harold & Becka Watkins) 706-374-0409 - \$135 – begins taking orders in January.
- [Wehrloom Honey](#) (Aron & Jessica Wehr) over in Robbinsville raises small-cell honey bees and will hopefully have nucs for sale next year - 828-735-5309.
- Beekeepers within the club may have colonies that they split this spring, but that is obviously a more unpredictable and limited “supply”.

Lots to look forward to next year! Until then, may God bless you and keep you. Enjoy the holidays.



Secretary’s Minutes

The meeting was called to order by President Zack Stockbridge. There were 15 people in attendance.

Since the October 6 meeting was the annual club social Potluck, Kay did not take minutes in October. The club expressed their appreciation to Carl and Denise Talbott for hosting the October potluck social.

Treasurer’s Report The Treasurer’s report was given by Fred Bernhardt. Opening balance on October 1 was \$445.82. We received \$25 in August from T-shirts, and spent \$44 on the social. Balance as of November 1 was \$426.82.

President’s Message –

Zack said that this is Election Month. The slate of officers is:

President	Zack Stockbridge
Vice-President	Tom Handford
Treasurer	Joyce Bernhardt
Secretary	Vacant

There were no nominations from the floor for Secretary, so that office was left vacant. A motion was made and seconded to approve the slate of officers. The vote to accept the slate was unanimous. *(Hopefully the position of secretary will be filled at or before the February meeting.)*

The club will not be doing a package order for bees this year. Members are

encouraged to order their packages through Wayne’s Feed Store. Wayne has ordered 120 packages, and 80 of those are already spoken for, so you should not delay in placing your order. Packages are \$80 and Wayne requires a \$40 deposit. Packages will arrive the 1st week in April – a good time to get bees! Zack said that Harold Watkins will be selling 5-frame nucs this year for \$135 and will start taking orders in January.



Zack updated us on the condition of his hives. The bees are storing most of their food in the brood box rather than the super above it.

Zack plans to keep the super on, though, as a method to reduce condensation in the hive. Other methods to reduce condensation are a type of fondant that absorbs moisture, special insulation, a modified inner-cover, and allowing air through the bottom board.



Zack encouraged members to stock up on sugar. You can get a 50-pound bag at Wayne's Feed Store for 25 cents a pound if you're a member of the club. John and Martha Penz said the sugar is not clean and needs to be sifted before it's cooked.

Zack will try to get information from Jeff Mansker about the Graham County October 30 meeting where the North

Carolina State Bee Inspector presented a program.

Zack was contacted by someone with bee equipment to sell – some new, some slightly used; all in good condition. A hive with 10 frames; 10 spare frames; 3-frame hand-crank extractor; plastic hat with veil, gloves and a capping knife. All for \$400 or best offer. Call Mike at (954) 895-6395 or after November 16 at (828) 837-0736.

Since not all those present at the meeting were participating in the cold-storage program, Zack asked those participants to stay after the meeting so he could give them the forms to fill out and provide information about logistics.

Protégé Report – I am so glad to say I'm finishing up my second season of beekeeping! It's been such a privilege to get to be a part of this group and learn from so many experienced members. One of the highlights of this year was attending the club potluck at the Talbott's home. As a teen, it is motivating to see adults so passionate about life long learning. One of the most rewarding experiences so far was to be able to give my honey as a gift and to see how appreciative they were to receive it. At this point in the year, I'm just trying to keep my bees fed and prepared for the winter. But as of today, they are great, which is encouraging. :) *Brionna*

Zack said that Brionna has been our protégé for two years, and our club usually gets a new protégé every 2 years. Club members were asked to think about new candidates for a protégé. Bill Reighter suggested checking in with biology classes in the area and there was the suggestion to check with the local 4-H club. Zack said that high school aged protégés work best because they are strong enough to work with the supers. He thought it would be good for the protégé to inspect at least 2 club members' hives before he/she receives his/her packages, so that he is somewhat knowledgeable before the packages arrive. Zack said that club members (i.e., more than just the club president) need to step up to mentoring the protégé, and, if that's not possible, maybe the club should step back from sponsoring a protégé.

Meeting Program The program this month was to plan for next year's programs. Zack asked if there was any interest in planning a "work meeting" sometime during December or January

where club members could do things such as assemble frames or make lip gloss or other wax products. Would any member like to host a work party? No one at the meeting volunteered to

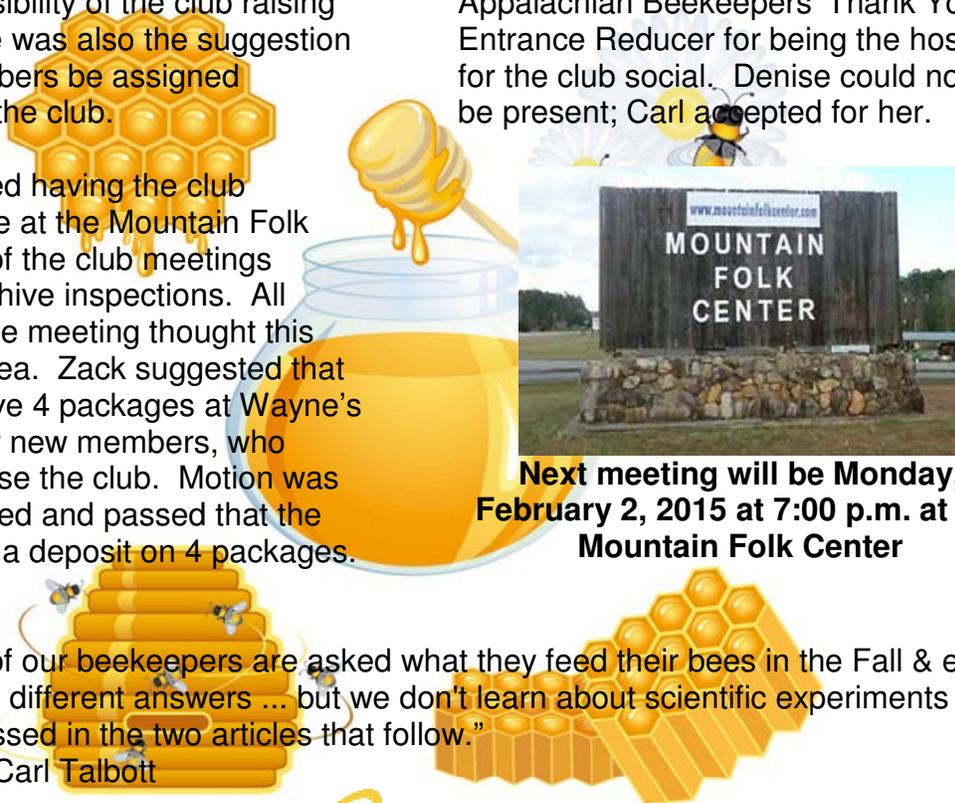
host such an event. If any other member is interested, please contact Zack.

Suggestions for next year's programs included making a nuc; marking queens; pest control; splitting hives; honey extraction; and mead making. Zack hopes to provide a hive-splitting demonstration in April, 2015. A half-day beginning bee school should be done again, too. Carl Talbott asked about the possibility of the club raising queens. There was also the suggestion that new members be assigned mentors from the club.

Zack suggested having the club maintain a hive at the Mountain Folk Center. Part of the club meetings would involve hive inspections. All members at the meeting thought this was a great idea. Zack suggested that the club reserve 4 packages at Wayne's Feed Store for new members, who would reimburse the club. Motion was made, seconded and passed that the club put down a deposit on 4 packages.

This coming Saturday, November 8, from 1:00 to 5:00 p.m., our club will participate in the Mountain Folk Center's celebration of the 100th Anniversary of the Agricultural Extension program. John and Martha Penz will demonstrate a hive and the club will display its teaching hive. There is a \$5 admission fee for the celebration.

Denise Talbott was awarded the Appalachian Beekeepers' Thank You Entrance Reducer for being the hostess for the club social. Denise could not be present; Carl accepted for her.



Next meeting will be Monday, February 2, 2015 at 7:00 p.m. at the Mountain Folk Center

“When some of our beekeepers are asked what they feed their bees in the Fall & early Spring, we get different answers ... but we don't learn about scientific experiments such as discussed in the two articles that follow.”
Submitted by Carl Talbott



Diet affects pesticide resistance in honey bees

Date: November 3, 2014

Source: Penn State

Feeding honey bees a natural diet of pollen makes them significantly more resistant to pesticides than feeding them an artificial diet, according to a team of researchers, who also found

that pesticide exposure causes changes in expression of genes that are sensitive to diet and nutrition.

"Honey bees are exposed to hundreds of pesticides, while they are foraging on flowers and also when beekeepers apply chemicals to control bee pests," said Christina Grozinger, professor of entomology and director of the Center for Pollinator Research, Penn State. "Our study demonstrates that exposure to non-lethal doses of at least two of these pesticides causes large changes in the expression of genes involved in detoxification, immunity and nutrition-sensing. This is consistent with results from previous studies that have found that pesticide exposure compromises bees' immune systems. Furthermore, our study reveals a strong link, at the molecular level, between nutrition, diet and pesticide exposure."

Exploring this link further, the researchers found that diet significantly impacts how long bees can survive when given lethal doses of a pesticide. "This interaction between pesticide exposure and nutrition is likely what's at play in our finding that feeding bees a complex diet of pollen -- their natural diet -- makes them significantly more resistant to lethal doses of a pesticide than feeding them a more simple, artificial diet," said Daniel Schmehl, postdoctoral researcher, University of Florida.

To determine the impact of pesticide exposure on gene expression patterns in honey bees, the scientists first fed one of two miticides -- coumaphos or fluvalinate, the two most abundant and frequently detected pesticides in the hive -- to bees for a period of seven days. On the seventh day, the researchers extracted RNA from the bees, attached a fluorescent marker to the RNA and examined differences in

gene expression patterns -- indicated by changes in patterns of fluorescence - between the pesticide-treated bees and the control bees.



"We found significant changes in 1,118 transcripts -- or pieces of RNA -- among the

bees that were fed either of the two miticides compared to the control group," said Schmehl. "These transcripts included genes involved in detoxification, immunity and nutrition." Based upon the results, the team performed several subsequent analyses aimed at understanding the impact of pesticides on honey bee physiology. One of these subsequent analyses examined the susceptibility of bees to pesticide stress after consuming a pollen diet or an artificial diet -- either a soy protein or no protein diet. The team fed the bees these diets while simultaneously feeding them a lethal dose of the pesticide chlorpyrifos, an insecticide that is frequently used to control pests in agricultural crops and commonly detected in honey bee hives. They then recorded bee mortality daily for each of the treatment groups for a period of 16 days.

The researchers found that the bees that were fed a pollen-based diet exhibited reduced sensitivity to chlorpyrifos compared to the bees that were fed an artificial diet.

The results appear in the online issue of the Journal of Insect Physiology. "This is the first time such a strong link between pesticide exposure and diet has been demonstrated at the molecular level, and the first time the effects of artificial versus natural diets

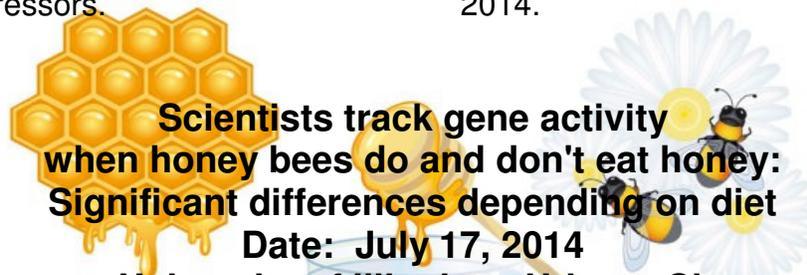
have been explored in terms of resistance to pesticides," said Grozinger. "Diet and nutrition can greatly impact the ability of bees to resist pesticides, and likely other stressors.

However, agriculture and urbanization have reduced the amounts and diversity of flowering plants available to bees, which likely nutritionally stresses them and makes them more sensitive to these other stressors.

If we can figure out which diets and which flowering plants are nutritionally optimal for honey bees, we can help bees help themselves."

Journal Reference:

Daniel R. Schmehl, Peter E.A. Teal, James L. Frazier, Christina M. Grozinger. Genomic analysis of the interaction between pesticide exposure and nutrition in honey bees (*Apis mellifera*). *Journal of Insect Physiology*, 2014.



Scientists track gene activity when honey bees do and don't eat honey: Significant differences depending on diet

Date: July 17, 2014

Source: University of Illinois at Urbana-Champaign

Many beekeepers feed their honey bees sucrose or high-fructose corn syrup when times are lean inside the hive. This practice has come under scrutiny, however, in response to colony collapse disorder, the massive -- and as yet not fully explained -- annual die-off of honey bees in the U.S. and Europe. Some suspect that inadequate nutrition plays a role in honey bee declines.

In a new study, described in *Scientific Reports*, researchers took a broad look at changes in gene activity in response to diet in the Western honey bee (*Apis mellifera*), and found significant differences occur depending on what the bees eat.

The researchers looked specifically at an energy storage tissue in bees called the fat body, which functions like the liver and fat tissues in humans and other vertebrates. "We figured that the

fat body might be a particularly revealing tissue to examine, and it did turn out to be the case," said University of Illinois entomology professor and Institute for Genomic Biology director Gene Robinson, who performed the new analysis together with entomology graduate student Marsha Wheeler.

The researchers limited their analysis to foraging bees, which are older, have a higher metabolic rate and less energy reserves (in the form of lipids stored in the fat body) than their hive-bound nest mates -- making the foragers much more dependent on a carbohydrate-rich diet, Robinson said. "We reasoned that the foragers might be more sensitive to the effects of different carbohydrate sources," he said.

The researchers focused on gene activity in response to feeding with honey, high-fructose corn syrup (HFCS), or sucrose. They found that

those bees fed honey had a very different profile of gene activity in the fat body than those relying on HFCS or sucrose. Hundreds of genes showed differences in activity in honey bees consuming honey compared with those fed HFCS or sucrose. These differences remained even in an experimental hive that the researchers discovered was infected with deformed wing virus, one of the many maladies that afflict honey bees around the world.

differently in the honey-eating bees have been linked to protein metabolism, brain-signaling and immune defense. The latter finding supports a 2013 study led by U. of I. entomology professor and department head May Berenbaum, who reported that some substances in honey increase the activity of genes that help the bees break down potentially toxic substances such as pesticides.

"Our results parallel suggestive findings in humans," Robinson said. "It seems that in both bees and humans, sugar is not sugar -- different carbohydrate sources can act differently in the body." Some of the genes that were activated

"Our results further show honey induces gene expression changes on a more global scale, and it now becomes important to investigate whether these changes can affect bee health," Robinson said.

Journal Reference:

Marsha M. Wheeler and Gene E. Robinson. Diet-dependent gene expression in honey bees: honey vs. sucrose or high fructose corn syrup. Scientific Reports, 2014

Bulk sugar at Wayne's Feed Store! \$0.25 per pound for members of the Appalachian Beekeeper's Association (\$0.30 per pound for non-members). Be sure to mention that you are a club member to get the discounted price.

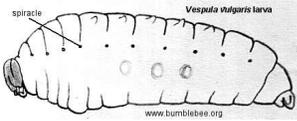


[Social wasp fast facts](#)

Wow, you could have knocked me off my chair with a feather when I found this on the internet. All the honeybee keepers I know, myself included, have told the general public (non-beekeepers) that wasps are carnivorous, meat eaters. Well, I just found out we are wrong! See <http://www.bumblebee.org/invertebrates/Hymenoptera2.htm>. We say this probably because we see social wasps carry off caterpillars, which makes wasps good and helpful to the gardener; not to us beekeepers when the wasps attack our honeybees.

The adult wasps are carrying the caterpillars back to the nest/hive. It's the wasp larvae that are carnivorous! Over the year I became curious why the yellow jackets(wasps) only bother my sugar water in the fall. Why are they seeking sweet? Here is what the internet has:

Wasp food and eating habits



Wasp grubs are carnivorous, the adults bring them prey which is mainly other insects. This is chewed up into a paste by the workers and queen and fed to the grubs. As many of these prey items are regarded as "pests" by gardeners, it is clear that the wasp should be regarded as the gardener's friend.

Adult wasps prefer sweet foods such as nectar, jam, ice cream, and as the adults feed the grubs the grubs exude a sweet liquid which the adult wasps lap up. Towards the end of summer when the queen has stopped laying eggs and all the grubs have hatched into adults, there is no more need for the adult wasps to bring back insect prey, and no grubs to give the adults the sweet substances they crave. So the adults go out and search for sweet substances. They find sweet nectar in flowers, but as they have short tongues they cannot reach the nectaries of some flowers. It is at this time of year that wasps become a nuisance to man if they discover our sweet foods such as sugar, jam, ice cream, etc.

Wasp larvae

The larvae are carnivorous eating chewed up bits of insects fed to them by adult wasps. In return the grubs exude a sweet secretion in their saliva which is lapped up by the adult wasps. This is why in early summer the wasp is the gardener's friend as it clears her plants of many pests.

Wasp Adults

Adults are vegetarian eating any sugary liquid, but mainly sugary liquid exuded from the grubs and nectar from flowers

Fred Bernhardt



OFFICERS

President	Zack Stockbridge	Vice President	Tom Handford
Secretary	Kay Cameron	Treasurer	Joyce Bernhardt

	<p>Andrews Veterinary Hospital</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>Shadow Ridge Bee Farm</p>	<p>Harold & Becca Watkins</p>	<p>Mineral Bluff, GA 30559</p>	<p>706-994-4175 706-374-0409</p>
	<p>Stockbridge Farm</p>	<p>Jen & 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>





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: _____