ARKANSAS BEEKEEPERS ASSOCIATION

BETWEEN THE BEE SPACE

August
2017
Vol. 4

EMILY BEMIS *photo*

EMILY BEMIS *photo*

Join the ABA!

ABA Mission Statement

"The Arkansas Beekeepers Association is dedicated to being the voice for beekeeping in Arkansas, and to promote beekeeping within the state. We shall provide a forum for the exchange of ideas and mutual support in the keeping of honey bees and the marketing of honey, to share our insights and passion for beekeeping to help others grow in their appreciation and enjoyment of keeping bees, to encourage all beekeepers, and to be a resource of materials, equipment and information."

The Arkansas Beekeepers Association meets twice a year around the state to discuss beekeeping practices, stay up to date on new information, and to learn from experts and professionals in the beekeeping field. The ABA membership includes a free emailed copy of the *Between the Bee Space* newsletter that is published biannually. For more information on becoming a member of the ABA, or renewing your membership, visit the ABA website.

http://arbeekeepers.org

Arkansas Beekeepers Association

EVENTS

BEEKEEPING CLASSES

Beneficial Plants & Pollinator Workshop
September 2, 2017 (10am - 12pm)
Heifer International - Little Rock

Introduction to Beekeeping
Instructor: Richard Underhill
Arkansas State University's Community Education program at the Heber Springs campus.
September 16, 23, and 30, 2017, 9 AM—4 PM.
$55 (due no later than 5 days prior to first class)To Register. Contact ASU Community Education, 501-362-1273 or daschueren@asub.edu

Arkansas Honey Festival
October 7, 2017 (9am - 4pm)
BemisHoneyBeeFarm.com
Free Admission • Honey Contest

Beginner Beekeeping Short Course
November 11, 2017 (9am - 4pm)
BemisHoneyBeeFarm.com
Hands on, lunch included, $35

U OF A BEGINNER BEEKEEPING CLASSES

The University of Arkansas Cooperative Extension Service offers Complete Beekeeping short courses around the state. These courses are open to anyone interested in honey bees or beekeeping. No prior experience with bees is necessary to participate. Classes will cover everything a person needs to know to begin keeping bees safely and successfully. Short courses consist of three class sessions, building on the information each night. Because the beekeeping industry is always changing to adapt to new challenges, these classes can be a great refresher course for experienced beekeepers, who may learn some new techniques or better understand the behavior of their bees. For a current schedule of classes and events, visit ***uaex.edu/bees.***

To add an upcoming event or photograph, please contact Emily Bemis.
(501)897-BEES or
emily@bemishoneybeefarm.com

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Arkansas Beekeepers Association

ABA 2017 FALL CONFERENCE

October 27th - 28th • Little Rock • Holiday Inn Little Rock-Airport-Conf Ctr
Speakers: James Tew & Dewey Caron

The 2017 ABA Fall Conference will be held October 27-28 in Little Rock. We will be moving this meeting to better accommodate our growing membership. We will be convene at the Holiday Inn Airport Conference Center, just off of I-440.

Our special guest speakers this fall will be two knowledgeable authors and beekeepers, Dr. Jim Tew and Dr. Dewey Caron. More details are available on page 19 - 20 and our website, arbeekeepers.org.
Pre-register for the conference and lunch online!

BEES ABUZZ FOR COFFEE AND CIGARETTES?

by Jon Zawislak

Long popular with people, it seems that bees also enjoy both caffeine and nicotine. Several studies over the past few years are trying to understand why. While bees may have trouble getting their little hands on tiny cigarettes and small shots of espresso, some flowers, it seems, will provide these chemicals naturally in their nectar. Nectar is primarily sugar and water, but contains traces of many other substances, including some nutrients and other compounds that could be toxic at higher concentrations.

Plants produce a wide variety of chemical compounds (alkaloids, phenols and terpenes, to name a few) in their foliage to dissuade herbivorous insects and animals from eating them. Humans, of course, have come to identify and utilize many of these compounds by incorporating small quantities of herbs and spices into our diet for flavor, or utilizing others for medicinal (or even recreational) properties. Lacing foliage with toxins often works to prevent damage from generalist feeders, but may also drive the evolution of specialist feeders. The manufacture of any substance by a plant comes as a metabolic expense in plant energy and resources, and presumably should provide some benefit to the plant, or it would not have developed a presence through natural selection.

Consider the monarch butterfly, which will only deposit its eggs on milkweed plants, the sole food for their caterpillars. Milkweed is toxic to most other insects, but monarch larvae have developed a strategy to sequester and store those toxins (called cardenolides), and weaponize them. They store the toxins bodily, making the adult monarchs extremely distasteful to birds. The plants do get munched by caterpillars, but they will also benefit from pollination by the adult butterflies. Adult monarchs, still packing cardenolides, are avoided by hungry birds, who quickly learn to recognize them. The viceroy butterfly, looking remarkably similar to monarchs, are also protected by famously mimicking their toxic cousins.

Izhaki et al. (2010) found that bees prefer visiting flowers that offer nectar containing small quantities of caffeine and/or nicotine over flowers without. Carefully designed choice tests clearly demonstrated that bees showed a preference for sugar solutions with nicotine concentrations similar to those found in nature over "clean" nectar. However, nectar with unnaturally high concentrations was avoided by the bees, suggesting that bees can detect these additives, and that Mother Nature has had time to find the optimal level that bees prefer (or at least will tolerate).

This begs the question of why bees would prefer these nectar additives. Do they provide some benefit to the bees? Do the plants benefit by getting the bees hooked, ensuring that pollinators will eagerly return to pollinate more flowers? Does a shot of caffeine provide a bit of energy buzz that helps bees on their busy ways?

In a new study by Baracchi et al. (2017) that used artificial flower choices, bumble bees appeared able to more quickly learn and recognize flowers if the nectar was laced with nicotine, even at very low concentrations. The bees also maintained a preference for the flower even after the nicotine had been removed -- an 'addiction-like' behavior on the par of the bees. A related investigation had suggested that bumblebees infected by parasites may self-medicate with flower nectar naturally high in nicotine, which could slow down certain infections (Baracchi et al. 2015), but these findings were not clear.

Earlier studies on several natural "psychoactive" secondary compounds in flower nectars suggested that some of these additives may indeed be used by the plant to keep addicted pollinators returning (Singaravelan et al. 2005), but the results were not definitive. However, honey bees did not appear to suffer ill health when fed even large quantities of nicotine for several weeks in a laboratory study (Singaravelan et al. 2006).

Another team of scientists found that nectar with higher caffeine content caused bees to perform more vigorous waggle dances to recruit additional foragers to a potential food source (Couvillon et al. 2015). This would cause the bees to overly exaggerate the quality of the nectar to her hive mates, resulting in higher recruitment to visit the flowers. One might consider this to be cheating on the part of the flowers, encouraging bees to return and pollinate when they were actually receiving less nectar as a reward. In this case the bees may get a little buzz, but the plant receives most of the benefit. That's a pretty crafty plant!

A study by Kessler et al. (2015) suggested that both honey bees and bumble bees showed a distinct preference for crop flowers containing low doses of neonicotinoid pesticides, although they did reduce consumption of food overall. This work is of particular interest because of concerns surrounding pollinators and neonicotinoid pesticides. Neonicotinoids are a class of synthetic pesticides based on the molecular structure of nicotine, which was one of the first insecticides ever produced under the brand name Blackleaf 40.

Nicotine and its synthetic counterparts can mimic the neurotransmitter acetylcholine, and in small doses acts as a stimulant (which tobacco users crave). In larger doses, they cause overexcitement of neurons. In insects, this overstimulation of the nervous system causes muscle tissues to exhaust themselves, resulting in death. Neonicotinoids are among the most widely used pesticides in the world, and are highly effective at killing insects. They are also currently under intense scrutiny for their potential effects on pollinators, although much published research has been contradictory, and the controversial issue has been highly politicized by numerous activist and industry groups.

While tobacco smoke is known to contain carcinogens, and nicotine in particular is a known poison, our story would be incomplete without mentioning the imker pfeife, or beekeeper's pipe. This device was used as a traditional bee smoker by Europeans for many years, perhaps originally most practically inside their indoor bee-houses. Combined with a special bee veil with a small hole in it, the beekeeper clenched his pipe in his teeth and happily puffed calming smoke while working his bees. The popularity of this this model waned with the adoption of the bellows smoker, but the impker pfeife is still available in Germany and some other places. Some researchers have even suggested tobacco smoke could be a useful tool in detecting and treating the parasitic varroa mites that infest our honey bees. Perhaps these old beekeepers were onto something, and their bees were always happy to see them, so they could take a break from working for a moment and eagerly get another puff?

BEETLE BAIT

USE THIS BAIT IN YOUR TRAPS TO INCREASE THE ODDS OF CATCHING SMALL HIVE BEETLES

1 tsp. of pollen or -
pollen substitute
1/8th tsp. of Brewers Yeast
1 tsp. of raw honey
1 tsp. of water
1 Slice of Banana

Mix and let ferment overnight. Pour in traps. Enough for 2+ traps.

HONEST BEEKEEPING MISINFORMATION

Good bee people but bad bee information

In my beekeeping youth, like so many other beekeepers, I had a beloved mentor. I speak of my very first beekeeping professor with respect and warm memories. Many professors have such a cadre of graduate students who are forever beholden to them. While my beekeeping professor did not mentor advanced students, he did teach thousands of undergraduates. Seemingly every one of them honored the man as an instructor and as a person.

In 1973, I distinctly remember him telling our bee class participants that drones are colony laggards and essentially contribute nothing to the functionality of the colony. At every opportunity, drones were to be eliminated. In his defense, the bee world was significantly different at the time. Other than organophosphate insecticides, nothing else was yet a problem -- No mites, no small hive beetles, and no killer bees. Flowering weeds were common, and there were abundant honey bees everywhere.

From the beekeeper's perspective, at that time, drones in managed colonies were not critical to the specific colony in question. But if anyone had ever asked a healthy colony if it wanted drones, an entirely different answer would probably have been presented. This is an example of bad information being given by an excellent instructor. This is also an old obsolete memory file that I have stored away. I will never again use this advice, but the memory file just sits there – waiting for the day to come when it is once again thought to be good management to kill all drones in our colonies. Oh, wait. Drone destruction is presently being recommended as a form of Varroa management.

Figure 1 Drones do seem to have a challenging life.

Years ago, I was at a bee meeting in the upper US Mid-West. While discussing American foulbrood, the speaker confidently explained that the reason AFB had always been such a common problem for US beekeepers is that wind easily spreads the disease miles and miles away from the diseased colony site. This was why, when the bee disease was encountered, beekeepers with American foulbrood needed to immediately destroy any suspected diseased colonies (actually, that part is correct.). But otherwise, these comments were

seriously wrong. Wind plays very little, if any, role in AFB dissemination.

This speaker is still a frequent presenter in his bee community, as he should be. The rest of his information was rock solid. I was the traveling presenter – the outsider-- far from home and departing the next day. What would you have had me do? (Later, I told one of the meeting organizers that some of the AFB spore dissemination information should be reviewed, and then I left town.) No doubt, some of the participants today are still storing those mental files about AFB spread that truly need to be erased.

Spotting some of these embedded errors can be difficult. When repeated, most of these misinformation events easily roll from the tongue and sound factual. And then they get restated many times until the recommendation becomes an accepted fact that is simply not correct.

Tanging a swarm – pleasant factual misinformation

This topic will probably result in some opinioned correspondence. The misrepresented thought is that once a swarm departs the hive, clanging pieces of metal together will cause the swarm to land. At meetings, I am told by occasional beekeepers that doing that very procedure brought a swarm right to the ground.

Consider this. It would be impolite – even unkind – for me to take that pleasant memory from the beekeeper, but unfortunately, there is no current science to explain why this effect would happen. Additionally, the question is begged how many swarms were tanged that did not come down?

Eighty-seven years ago, Harrod-Hempsall, wrote, "The noise made by tanging has no effect whatever upon swarming bees; therefore, instead of wasting time and annoying neighbours by making an abominable din, advantage should be taken of the known habits of bees."

Figure 2 Playing on brazen vessels to cause a swarm to settle. A 175 year old engraving presented in, Beekeeping, New and Old, Described with Pen and Camera. W. Harrod-Hempsall. 1930. Publisher, British Bee Journal

Losing a swarm is disappointing. I have personal experience with that pain. I can also say that tanging is as good as anything one can do when a swarm is departing. Playing a loud radio, spraying water with a hose, or tossing stones or sand through the swarm will probably have the same random effect as tanging. The good news is that other than amusing the neighbors, no harm is done when swarms are tanged. Ironically, alerting neighbors may be the reason tanging was ever begun as a swarm manipulation procedure.

Drumming bees – shows all the signs of factual misinformation

Though not practiced much now, drumming instructions persist in both new and old literature. When transferring bees from one box to another – for whatever reason – the drumming procedure is thought to cause most bees to abandon their stores, brood, and former nest cavity in lieu of a new or different box offered to them.

It is a simple procedure: Flip the box to be abandoned so the combs are reversed (comb bottoms are upward). Position it near the new box. Tap, drum, bump, bang or thump on the side of the inverted box with something – hands, hive tool, stone – for an undetermined length of time with an undetermined level of vigor. If all goes well, drummed bees will inexplicably begin to abandon hive and home.

Article continued on next page

Search the web. There are videos and testimonials documenting the success of this procedure, but as is often the case, if this procedure is a sound one, why is it not used for other common bee reasons? Why is it not a staple of bee management? Removing bees from supers? Driving bees up or out for package shaking or split making? Driving bees from the wall of a house?

Years ago, beekeepers using skeps routinely used their hands to bump the upturned skep where the combs were attached. While there was no mention how to long to drum, there was a comment that some bees would remain in the drummed skep. Historically, there is some credence to the drumming procedure.

Interestingly, the beekeeping electronic bee media has hybridized the procedures of tanging and drumming. What should this blended procedure be named – "trumming?" In this variant procedure, drumming – usually on a wooden surface – will cause a swarm to land there. This information is wrong in so many ways.

It is important to know that bees (apparently) do not sense most airborne vibrations. Now the arguments come. Maybe they feel comb-borne vibrations within their body. Why would not any rhythmic sounds or bumps in the bees' environment cause them to leave their hive or at lease cause colony discontent? Presently, drumming is not a common procedure but is well established in beekeeping literature. Again, no harm seems to be done to the colony. Drum away.

Double screens for winter nuc survival – usually factual misinformation

A commonly recommended wintering procedure is to place a smaller colony above a double screen that is positioned on a strong lower colony. It is thought to make winter life easier for the smaller colony. Indeed, in some instances, it could very well do that. But there seems to be so many variables as to make the success of the procedure random.

How large is the bottom colony? What is the cluster size of the smaller upper colony? How far is the bottom colony from the upper colony? How severe is the winter season? Does the warmer, moisture-laden air cause a problem in the upper unit?

Figure 3 A double screen made by Ohio beekeeper, D. Wilson

Figure 4 Double screen entrance in the open position

Bottom line – wintering small colonies, for the future, will be a challenging process. Since the double screen wintering procedure has been practiced for years without yielding amazing general results, it seems that this is not the silver bullet answer for wintering small colonies. For sure, double screens have other uses such as making spring splits or producing queens, but I am not convinced

that top wintering is one of its better uses. However, if the procedure is tried, it would appear that no great harm is done.

Queen excluders – the eternal argument

You either hate them or you love them? Only very briefly is an undecided beekeeper allowed to stay in the middle of this perpetual bee discussion. Misinformation and hyperbole flow from both camps. "I use them to keep the grass down out in front of the hive." "I have always used them and never found them to be a problem." "These things are nothing more than honey excluders!" "They cause swarming." "They clog with burr combs." My favorite description is this one presented by a recent speaker – "Though I don't like them, and do not use them, here is a description of the pros and cons of excluders." That is certainly an unbiased source for acquiring neutral information.

An older publication presented quite a few years ago indicated that without an upper entrance, queen excluders did reduce honey crops.[1] In fact, simply using web based searches, finding opponents with confirmed opinions to queen excluder use is common. But actual objective research findings are rare.

So, I here offer my own unbiased, but emotionally based opinion. I have these devices in my storage building right now. Depending on my future schedule, I might use them or I might not. They can be useful when finding a queen that has refused to show herself, and they have specialty uses in queen production or comb honey production. These devices clearly have novel uses and do seem to function to keep the queen confined as needed. If maximal honey production is the goal, I could see how they might hamper foragers from squeezing through them. If maximum management efficiency is the goal, I can also understand why they might be used.

All the reasons to use or not to use these grids are readily available on the Internet. I refer you to search there. If they fit your need, use them. If they are not helpful, don't use them; but I cannot categorically support the disdain that some have for them.

There are so many more of these questionable missives…

A few more examples that are presently thought to be incorrect are:

1. Bees sting because they are angry.
2. Our clothing, protective gear – indeed, even the beekeeper – produce an offensive odor to the bees.
3. Drones follow the queen from the hive as she takes her solitary mating flight.
4. Bees hate black-colored clothing or protective items. It can only be because black bears are bees' natural enemies.
5. Members of a smoked colony engorge on honey in preparation for departing the burning colony. It is sometimes said that this behavior is a holdover behavior from bees' ancestral days in tropical environments where wildfires were common.
6. Bees come to know the beekeeper, ergo strangers or apiary visitors would be treated differently and stung more often.
7. Alas, when the beekeeper dies, the bees must be told. The process is referred to as, "Telling the bees." This is a tender recommendation, but emo-

Article continued on next page

tionally based. [2]

Happily, most bee presenters are not trying to intentionally mislead other bee people. They believe the validity of the information they are offering. This process of honest misinformation distribution happens in many ways in everyday life – not only beekeeping. Keep an open mind and be leery of broad recommendations that have a miraculous ring. Questioning established beekeeping idioms is okay. Make changes when you should, but base these changes on facts.

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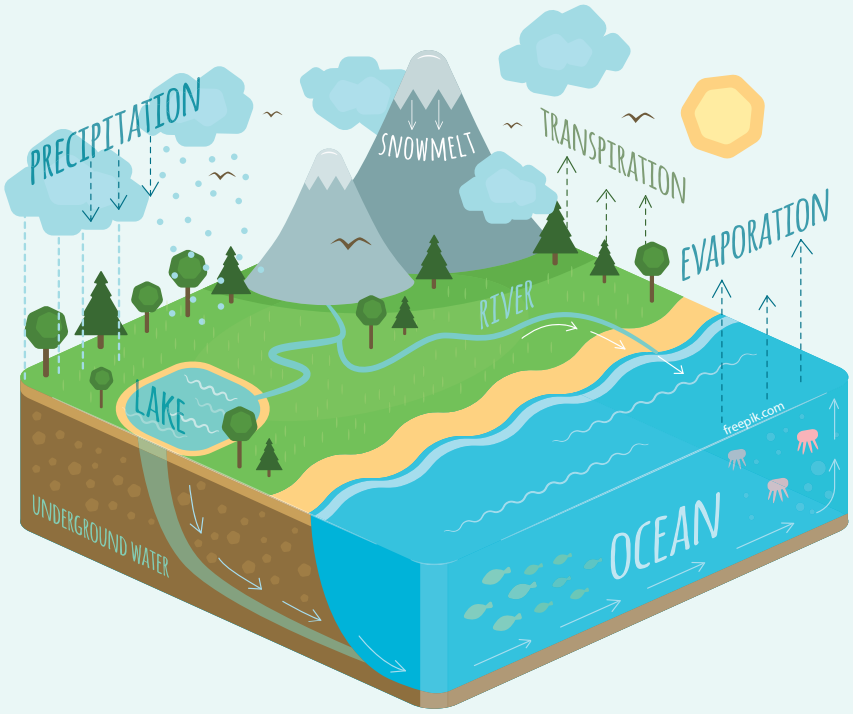
[1]http://www.beesource.com/point-of-view/jerry-hayes/queen-excluder-or-honey-excluder/

[2]Many years ago, My Irish beekeeper host stopped me at the entrance to his apiary. With his booming voice, he told the bees that I was a visitor and that I was to be treated with respect, not be stung and be welcomed in the apiary. It was an apiary visit that I will always treasure. However, I doubt that the bees gave much notice to the instructions.

Or….
Dr. James E. Tew
Emeritus Faculty
The Department of Entomology
The Ohio State University

HOW NECTAR GETS TO THE TOP OF A PLANT

BY ALLAN ISOM



Ever wonder how water gets from the ground to the top of a tall tree? Well, the same process occurs in plants.

But first three words need to be understood. Rain (Evaporation) occurs when water in a lake vaporizes and rises up above the earth.

Evaporated water in the atmosphere is then condensed (Condensation) into clouds as small droplets.

When these droplets combine with other droplets they become heavy enough to fall toward the ground as rain. (Precipitation).

The reason droplets collect together is because water is made of two hydrogen particles and one oxygen particle or H2O.

The hydrogen particles are tightly bonded together and they quickly bond with other water drops of water. That is why water collects in puddles on a surface such as concrete or a kitchen floor.

So what does this have to do with water getting to the top of a plant?

When our children were small and they spilled water on the table one would call for a sponge. Today we say "Get a paper towel." A paper towel is made from wood which is made of tiny wood fibers that are very absorbent.

For example you can see water spreading across a paper towel as it is absorbed by the paper tissues of the towel.

The point is that water is absorbed by a flower's many paper tubes and is then absorbed by the fibrous material above it.

Hold a paper towel above the water with the bottom edge extending into a puddle of water and you can see the water climbing up the paper towel until gravity stops it.

But for water to travel up a four foot flower another Scientific fact is needed. The leaves on a flower are porous and that fact allows water to evaporate.

As the water in a leaf evaporates a vacuum effect occurs under the leaf. When that occurs water moves up to fill the empty space in the leaf or flower.

This vacuum effect pulls the water upwards and because water binds to water (H2O) the leaf is refurbished with watery nutrients which actually come from the roots below the ground.

When water gets to the flower on the plant the flower will transform the water to a smelly sugary substance inside the petals which will attract insects...especially honey bees.

Mother nature is an amazing blessing to the beekeeper.

SEEDS TO SAVE THE BEES

by Jon Zawislak

Save the bees! For quite some time now bees and other pollinators have been declining in abundance and diversity all over the world. Honey bees in particular have received a lot of attention over the last decade because of their role as the primary managed pollinator in agricultural production. And we have all been challenged to save these industrious insects before it's too late.

We have probably all heard the dire prediction, attributed to Albert Einstein, that humans would all disappear in a mere four years without bees. And while this quote has appeared in many notable publications, there is no evidence that Einstein ever spoke about the fate of bees. While he may have been a brilliant mathematician and physicist, he was neither a biologist nor a farmer or beekeeper. The earliest reference to his making any statement about the fate of man being tied to that of the pollinators dates to a French publication published ten years after his death.

We have all been encouraged to sign online petitions demanding that retailers stop selling plants treated with pesticides, or to force the EPA to ban entire classes of chemicals outright. Pesticide exposure may be one factor in pollinator decline, but it is hardly the lone gunman in this story. Honey bees are being stressed out these days by exotic parasitic mites, the viruses that these mites vector, bacterial and fungal pathogens, and poor nutrition caused by habitat loss. And, we should admit, by bad beekeeping practices.

Honey bees get all their nutrition from flowers. Adult bees can live on just honey. They are as big as they will get, and won't live much longer anyway. But honey is really just sugar... a carbohydrates to fuel the bees' activities, rather than a nutritious food. Once a honey bee reaches the age to begin foraging, she becomes expendable to the colony, and is expected to work herself to death. Young bee larvae, however, require lots of protein and vitamins to develop healthy and strong. All of their dietary nutrients are provided by floral pollen. No single pollen source contains all the necessary amino acids and nutrients a growing bee needs, so colonies must be able to access resources from at least 5 or 6 different flower species at a time to get all the nutrients they require.

Due to changes in land management, many areas are not very friendly to bees and other pollinators. Wild areas are cut down, paved over, and converted to urban, agricultural or recreational areas. Golf courses may look green, but it can take a tremendous amount of herbicides and other pesticides to keep them looking manicured. Recently, some golf course managers have begun adding more pollinator-friendly vegetation to the surrounding landscapes, but without a single dandelion or a clover in sight, a fairway is a vast green desert to a hungry bee. Many suburban neighborhoods aren't much better. Lawn care specialists heavily advertise their services to keep your lawn free of those pesky "weeds" that bees may rely upon for survival. Agricultural areas can provide abundant floral resources to bees, but when planted as vast monoculture crops, bees can suffer from poor nutrition when they have only a single crop to pollinate. California almond growers are encouraged to help the bees they must rent by planting early blooming cover crops between and around almond trees to provide those missing nutrients.

Other pollinators, such as the monarch butterfly, are also in danger from habitat destruction, because they will only lay eggs on the milkweed plant, which is the sole food of their caterpillars. Countless other native pollinator species are rapidly losing habitat resources as well. The same habitat that supports pollinators is also home to game birds, such as pheasant and quail, and count-

less other bird species and other wildlife. So if you want to save the bees, you can plant some flowers.

Several companies and organizations have been offering free packages of seeds to help you save the bees and other pollinators in your own neighborhood. The most recent campaign to generate plenty of publicity has been from Honey Nut Cheerios. Their efforts, however, were widely criticized by environmental groups for the choice of seeds included in the packages. The seeds were distributed nationally, but some contend they contain plant species that are not native to certain regions, and could potentially become invasive.

The cereal boxes themselves prominently feature an animated spokes-bee, Buzz. This mascot, presumably a drone, would never be found making honey in a hive, and should symbolize hard work and productivity about as well as Homer Simpson. A peek at the nutrition label on those O's will show you that, despite the prominent placement of one ingredient on the front of the box, there is far more sugars than honey inside the box. Of course, this comes as no surprise, and is standard practice for processed foods, which like to tout the good name of honey, but often utilize cheaper high fructose corn syrup for most of their sweetening. Also, the bulk of honey that gets used in the food processing industry comes usually from cheaper sources overseas, and not from hard-working American bees.

Many corporations have tried to shine a spotlight on bee declines in the recent past. Other pollinator seed mixtures have been available from organizations, partnerships and corporations such as Bayer CropScience or Monsanto. These efforts have sometimes been dismissed as mere greenwashing by some of the companies that are seen as directly responsible for pollinator declines.

Should citizens be concerned about planting these flowers? As cynical as it sounds, most people who receive these packages of seeds probably do so with the best of intentions, but a large portion of the seed packs probably wind up collecting dust in the back of a drawer somewhere, and will never make it

into the ground. And of those that are planted, many will probably not survive to set seed themselves anyway, due to lack of care. While we should not encourage folks to scatter exotic seeds in natural areas, there is probably little ecological risk of planting a handful of these seeds in an urban landscape, considering how disturbed the ecology of an urban area already is. In such a challenging environment, bees and other wildlife need all the help they can get. And while a large honey bee colony requires thousands of acres of forage to feed itself, a solitary native bee or butterfly might find a small patch of flowers from these seed packets to be just what they need.

Honey bees, it should be noted, are not native to North America anyway. They were brought here by Europeans in the 1600s. For this reason, honey bees can never be listed as endangered species here. Likewise, many of the best honey-producing plants are are also foreign in origin, and some can indeed become highly invasive. But honey bees are generalist feeders, and highly adaptive to finding plants in the landscape that they enjoy, whether we scatter a handful of seeds or not.

If you want to help the bees, by all means plant some flowers. Tend your gardens and tend your bees. For those who are not up to that challenges of modern beekeeping, the next best thing is to support a local beekeeper by purchasing some local honey. It may cost a bit more than the honey in the supermarket, but fresh local honey tastes so much better, and your support will help to keep those bees alive and well, and working hard in your own neighborhood.

ARKANSAS BEEKEEPERS ASSOCIATION
2017 FALL CONFERENCE

HOLIDAY INN LITTLE ROCK AIRPORT CONFERENCE CENTER

OCTOBER 27-28

FRIDAY

8:00 A.M.	REGISTRATION OPENS • COFFEE • VISIT VENDORS
9:00 A.M.	**JEREMY BEMIS** • *PRESIDENT'S WELCOME*
9:15 A.M.	**DEWEY CARON** • *GOOD NEWS ABOUT HONEY BEES*
10:15 A.M.	COFFEE BREAK • VISIT VENDORS
10:45 A.M.	**JIM TEW** • *INDICATORS OF A HEALTHY HIVE*
11:45 A.M.	**DANNY BREWER** • *PLANT BOARD UPDATE*
12 NOON	LUNCH (ON YOUR OWN)
1:30 P.M.	**DEWEY CARON** • *HOW BEEKEEPERS ARE REDUCING COLONY LOSSES*
2:30 P.M.	**JIM TEW** • *THE FOULBROOD DISEASES*
3:30 P.M.	COFFEE BREAK • VISIT VENDORS
4:00 P.M.	**RON RAINEY** • CAPTURING LOCAL MARKETS
4:45 P.M.	*DISMISS FOR THE DAY*
5:30 P.M.	*OPTIONAL: MEET IN HOTEL LOBBY FOR SHUTTLE TO DOWNTOWN DINING*

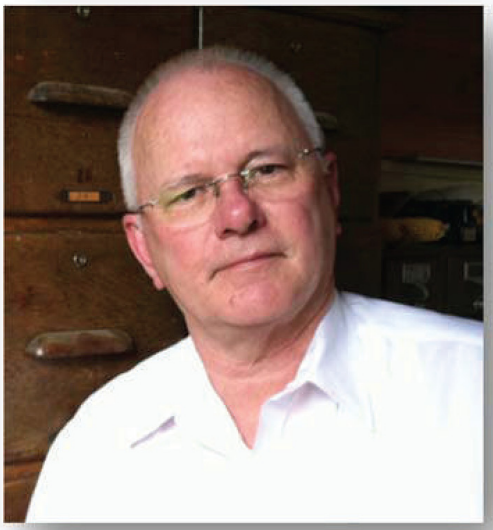
SATURDAY

8:00 A.M.	REGISTRATION OPENS • COFFEE • VISIT VENDORS
9:00 A.M.	ANNUAL BUSINESS MEETING (ABA MEMBERS ONLY)
9:30 A.M.	COFFEE BREAK • VISIT VENDORS
10:00 A.M.	**DEWEY CARON** • *USING NUCS AS SUPPORT HIVES*
11:00 A.M.	**JIM TEW** • *WAX COMBS: A COLONY'S SKELETON*
12 NOON	LUNCH • ON YOUR OWN
1:30 P.M.	**DEWEY CARON** • *WHAT'S YOUR PLAN?*
2:30 P.M.	**JON ZAWISLAK** • *EXTENSION UPDATE*
3:00 P.M.	COFFEE BREAK • VISIT VENDORS
3:30 P.M.	**JIM TEW** • *THE WAX MOTH*
4:30 P.M.	*DISMISS • SEE YOU NEXT YEAR!*

PLEASE WELCOME OUR SPECIAL GUEST SPEAKERS FOR THE FALL CONFERENCE

DR. DEWEY M. CARON IS EMERITUS PROFESSOR OF ENTOMOLOGY & WILDLIFE ECOLOGY, UNIVERSITY OF DELAWARE, & AFFILIATE PROFESSOR, DEPARTMENT OF HORTICULTURE OREGON STATE UNIVERSITY. HE SPENT MORE THAN 40 YEARS TEACHING, DOING BEE EXTENSION AND BEE RESEARCH AT CORNELL UNIVERSITY, THE UNIVERSITY OF MARYLAND AND THE UNIVERSITY OF DELAWARE. SINCE RETIREMENT IN 2009, HE SPENDS PART OF EACH YEAR IN BOLIVIA KEEPING AFRICANIZED BEES, SOME TIME ON THE EAST COAST GIVING BEE SCHOOLS AND LECTURES, AS WELL AS IN OREGON WHERE HE RESETTLED TO BE CLOSER TO 5 GRANDKIDS AND 5 BACKYARD HIVES. HE IS THE AUTHOR OF HONEY BEE BIOLOGY AND BEEKEEPING AND CO-AUTHOR OF OBSERVATION HIVES: HOW TO SET UP, MAINTAIN AND USE A WINDOW TO THE WORLD OF HONEY BEES.

DR. JAMES E. TEW IS THE BEEKEEPING SPECIALIST FOR THE ALABAMA COOPERATIVE EXTENSION SYSTEM, AUBURN UNIVERSITY AND EMERITUS PROFESSOR, THE OHIO STATE UNIVERSITY. JIM HAS TAUGHT CLASSES, PROVIDED EXTENSION SERVICES, AND CONDUCTED APPLIED RESEARCH ON HONEY BEES AND HONEY BEE BEHAVIOR - SPECIFICALLY POLLINATION BEHAVIOR. IN 2000, HE RECEIVED THE FIRST EAS ROGER A. MORSE TEACHING/EXTENSION/REGULATORY AWARD. HE CONTRIBUTES MONTHLY ARTICLES FOR NATIONAL BEEKEEPING PUBLICATIONS AND HAS WRITTEN: BEEKEEPING PRINCIPLES, WISDOM FOR BEEKEEPERS, THE BEEKEEPER'S PROBLEM SOLVER, AND BACKYARD BEEKEEPING. HE IS A FREQUENT SPEAKER AT STATE AND NATIONAL MEETINGS AND HAS TRAVELED EXTENSIVELY TO OBSERVE BEEKEEPING TECHNIQUES.



DR. RON RAINEY IS A PROFESSOR AND EXTENSION ECONOMIST WITH THE UNIVERSITY OF ARKANSAS SYSTEM AND DIRECTS BOTH THE SOUTHERN RISK MANAGEMENT EDUCATION CENTER AND THE CENTER FOR AG AND RURAL SUSTAINABILITY. HE IS HEAVILY INVOLVED WITH FARM-TO-CONSUMER SALES IN HIS ROLE WORKING WITH THE ARKANSAS MARKETMAKER PROGRAM, PART OF A NATIONAL NETWORK THAT CONNECTS PRODUCERS, FARMERS AND FISHERMEN WITH FOOD RETAILERS, GROCERY STORES, PROCESSORS, CATERERS, CHEFS, AND CONSUMERS.