



Missouri State Beekeepers Association
401 NW Heady Avenue, Ferrelview, MO 64163
www.mostatebeekeepers.org

December 2016

Eugene Makovec
Editor
editor@mostatebeekeepers.org

This beautiful fountain swimming pool is one of the many amenities offered by the recently remodeled Lodge of the Four Seasons in Lake Ozark. While mid-Autumn was not the season for outdoor swimming, Fall Conference weather was great for a walk around the grounds between lectures.

Conference coverage begins on page 5.

photo by Eugene Makovec

INSIDE THIS ISSUE

From the President	2	Beekeeper of the Year ...	11
Around the state	4	<i>Erin Mullins honored</i>	
<i>Local club activities</i>		Youth Beekeeper Award ...	13
Fall Conference wrap-up ...	5	<i>Alejandro Reed is first recipient</i>	
<i>Oliver, Disselkoen don't disappoint</i>		Local associations	12
Did Einstien really say that? 6		Membership application ...	14
<i>"Four years"quote investigated</i>		Directory of Officers	15
Spring Learning Session ...	7	Desloge bee law on hold ...	15
<i>Join us March 4 in Columbia</i>		<i>MSBA will have a say</i>	



The Best Selling BEEKEEPING Magazine In AMERICA!

- 12 Big Issues A Year
- The BEST Beekeeping Calendar
- The ONLY Urban Beekeeping Section
- The ONLY Kids & Bees Activity Page
- Information on Gardening and Also Chickens
- Paper & Digital Editions

Keeping Bees
Helping Beekeepers
For Over

141 Years

\$25

Save 40% Off
The Newsstand
Price!

To Order Visit
www.Beeculture.com

From the President by Valerie Duever

Well, that conference was just excellent, wasn't it?

Randy Oliver is such a dynamic speaker and is so interesting with all of his research projects. All of you should continue to follow him on his webpage: scientificbeekeeping.com as it is always changing. Mel Disselkoen was also very good with his MDA splitter method of raising honey bees. His website is mdasplitter.com if you want to know more about that method.

As always, there are so many folks to thank for helping. The Fall Conference truly ran like a well-oiled machine and the exit surveys were the proof that we "done good" this year. Thank you!

My favorite part of the Conference is the Awards Presentation during dinner on Friday night. Working with an all-volunteer organization, it sometimes becomes very difficult to make sure those that do help are properly recognized for their efforts. Erin Mullins was so surprised to be selected as the MSBA 2016 Beekeeper of the Year, but those of us that have worked with her know, she was an obvious choice. From her reign as Honey Queen to her current position as Contest Coordinator, Erin has done so much to promote managed beekeeping with the younger generation. That is what we need as an industry today...younger folks exploring managed beekeeping. With folks like Erin, it will happen.

Speaking of younger beekeepers, we were so excited to have such an excellent candidate for MSBA 2016 Young Beekeeper of the Year. Alejandro Reed was nominated by a Past MSBA President and his current mentor, Ray Nabors. Congratulations, Alejandro! You, too, are an inspiration to young beekeepers everywhere. Keep up the wonderful spirit and curious attitude!

Wow...my last letter as President of the MSBA. The past two years have just flown by! Together, we have accomplished so much! We were able to get a Honey Bill passed. We have been working with a number of professional organizations to get additional educational programs started that will help bring in more beekeepers for Missouri. We have expanded our organization with another area director because of the growth in this industry. We have updated our Queen Program to include Ambassadors so young men and women can learn about beekeeping. And there is more to come.

My focus, for the next few years anyway, will be to work with the MSBA Education Committee. We are brand new this year and have lots of great ideas that need exploration. The folks that have volunteered to be on that committee are well-educated and very dedicated to managed beekeeping. Since we haven't had the opportunity to have our first meeting, there isn't much to present at this time. Let's just say that we are all excited about bringing more focus to the educational opportunities available around the state. More to come on this subject as it develops...

As a closing statement, I just want to say "thank you". I have been very proud to have been selected (yeap...selected. Took Mr. Timmons three tries to talk me into this position...) to lead this organization. Two years is a very short time to accomplish much, but I feel very happy in all that we have done and all the plans we are making for the future. I am thrilled to be passing the proverbial baton to Clayton Lee. Clayton has been working very closely with me as your Vice President and he is an excellent leader. The new board is very impressive and I think you are going to be happy with the upcoming progress they will make.

It really has been sweet! Thanks for being a part of the Missouri State Beekeepers Association!

Valerie





Holiday Gift Ideas - Order early!



M00010

New 2015
Edition of
The Hive and the Honey Bee
Lip Balm Kit
M01930



Tools

**High Quality
Refractometer**

M00596



**Premium
Smokers**



M00926

M00928



**Economy
Vent Suit**
V01260(size)
Suit

**Many styles
from which
to choose**



Bee Hive Cake Pan



M01160

**Assembled
Starter Kit**



C52201P

**A complete line of
quality woodenware
& foundations**

Gift Bags



GS4006

**Observation
Hives**



GS4005



GSGIFTBAG3

GSGIFTBAG1

WWW.DADANT.COM

CHECK WITH YOUR NEAREST DADANT BRANCH FOR PRICING AND THE BEST SHIPPING RATES

• 51 S. SECOND STREET, HAMILTON IL 62341 TOLL FREE 888-922-1293 FAX 217-847-3660 •
• 1318 11TH STREET, SIOUX CITY, IA TOLL FREE 877-732-3268 FAX 712-255-3233 •



Around the state ...

Wright County Beekeepers will be conducting a **Beginning Beekeeping** course January 5, 12, 19 and 26, with additional dates reserved for makeup days, if needed, due to bad weather.

Classes are Thursday evenings from 6:30 to 9:00 PM at the Laclede Electric Co-Op, 5900 Highway 5, in Hartville. Students will learn what is needed to start with bees and how to manage them successfully. There is no charge for the course, but pre-registration is encouraged. For questions or to register, email WrightCountyBeekeepers@Gmail.com or call (417) 324-6850.

Northwest Missouri Beebusters is having a **Beginning Beekeeping** class on January 7th from 1-4 pm at the Maryville High school. Cost is 12 dollars.

Advanced beekeeping class is February 4th from 1-4 pm at the Maryville high school. Cost is 12 dollars.

For more info, email beebusters2012@gmail.com

Golden Valley Beekeepers will offer a **Beginning Beekeeping Workshop** on Mondays Jan 9, 16, 23 and 30 from 7-9 pm each night at First Assembly of God Church, 1506 E Ohio, Clinton (at the east jct of Hwys 7 and 13, in front of Walmart).

Registration fee is \$35 per household, including textbook. Pre-registration requested, but walk-ins welcome. Raffle tickets for beekeeping supplies will also be sold.

For more info, visit www.goldenvalleymbekeepers.com, find Golden Valley Beekeepers on Facebook, or call Jerry or Jamie Perry at 660-383-1355.

SW Missouri Beekeepers of Neosho has a beginner course January 14 and January 21, from 1pm to 5pm at the Neosho High School Ag building. Cost is \$15 for materials. Interested people can contact Maxwell Helm at 417-439-3709 or maxwellhelm1@gmail.com.

The **Parkland Beekeepers Association** will be having their annual **Bee Day** on Saturday, January 21 at Mineral Area College in Park Hills. An introduction to beginning beekeeping will be presented as well as more advanced topics for established beekeepers. Vendors of beekeeping supplies will be invited to attend and display their wares. For more information, watch for local news releases or contact Ray Politte at 573/631-8236.

Boone Regional Beekeepers has their annual Beginning Beekeeping Classes in Columbia on January 21st. For more information see Boonebees.org

Three Rivers Beekeepers is offering a **Beginning Beekeeping Workshop** on January 27th and 28th (Friday 6:00 pm – 9:30 pm and Saturday 9:00 am to 6:00 pm).

The classes will cover the following topics: Honeybee Biology; Basics of the Hive; Basic Beekeeping Equipment; Purchasing and Assembling Hive Equipment; Obtaining and Installing Honeybees; Inspecting and Managing the Hives; Solving Common Beekeeping Problems; and Preparing Your Hives for Honey Collection.

Cost is \$75, including a book, refreshments and Saturday lunch.

The workshop will be held at the St. Charles County Extension Center in St. Peters. Register online at www.ThreeRiversBeekeepers.com

The **Eastern Missouri Beekeepers Association** will offer a full day of professional beekeeping instruction for beginners and experienced beekeepers on Saturday, February 11 at Maritz in Fenton, Missouri. Registrants are encouraged to attend the Fifth Annual EMBA **St. Louis Beekeepers Mardi Gras Banquet** the evening before the workshop on Friday, February 10, at Maritz.

Leading beekeeping educators, and honey bee health specialists at the University of Minnesota Bee Lab, and the Honey Bee Research Centre at the University of Guelph will be among the visiting faculty leading the workshop. The **Experienced Beekeepers course** will be tailored towards intermediate and expert level beekeepers and will place special emphasis on hive management and honey bee health issues.

The **Beginners Beekeeping course** is intended for novice beekeepers and persons with no prior beekeeping experience. The class will cover all aspects of basic beekeeping to prepare students to start keeping bees in 2017.

Tuition for the workshop is \$85 per person if registered by January 22, 2017. Tuition is \$95 per person for those registering on or after January 23rd. Banquet registration costs \$30. Registration closes February 5th.

Lunch, refreshments and a reference book are included with the workshop. Registration packets will include course materials, beekeeping periodicals, and equipment catalogs.

The Friday evening banquet features New Orleans style food and music, a cash bar, door prizes, including nucs, queens and beekeeping equipment, and a keynote speaker. The cost of the banquet is in addition to the workshop. Registration is available online at www.easternmobeekeepers.com. More information is available by email to info@easternmobeekeepers.com or calling 314-669-1828.

The **Midwestern Beekeepers Association** will have their 22nd **Beginning Beekeeping Workshop** on Saturday, February 25, 2017 at Burr Oak Woods Nature Center, 1401 NW Park Rd, Blue Springs, MO 64015.

The workshop registration fee is \$35 and includes the workshop, presentation notes and First Lessons in Beekeeping by Keith S. Delaplane. Registration will begin at 8 am and the workshop will be from 9 AM to 5 pm with a break for lunch. Beekeeping suppliers will be on site to take orders for bees and supplies. The class size is limited to 60.

To register, please visit <http://www.midwesternbeekeepers.org/> to download a registration form. For more information, please call Bob Williams at 816-331-6634.



Fall Conference offers hefty helping of beekeeping science

Randy Oliver headlines, lives up to his reputation

Story and photos by Eugene Makovec

Randy Oliver is a commercial beekeeper who resides in California and, together with two sons, runs several hundred colonies for pollination, breeding, and a variety of research on everything from mite treatments to agricultural pesticides.

Diane and I had the good fortune to be asked to pick him up at the airport on Thursday afternoon and drive him down to the Lake for the Conference. We jumped at the chance; what beekeeper wouldn't relish the opportunity to spend 2-3 hours with one of the premier honeybee experts in the country?

I'd been following Randy in the American Bee Journal, at scientificbeekeeping.com and on the Bee-L beekeeping list for years, and knew that he was both opinionated and extremely well-versed in the science of beekeeping. During the drive down, we got a head start on our education, along with some great conversation on everything from family to politics.

I will not attempt to report every bit of knowledge imparted by Randy or the other speakers at our Conference, but will hit on what I thought interesting or new:

GMOs

"GMOs and Honey Bees" was the listed topic, on an agenda heavy with Randy Oliver. (I don't know what we paid him for the weekend, but I'm certain we got our money's worth.) Randy commented on this over breakfast on Friday: "I've never had a group of beekeepers ask me to talk about this."

I explained that genetically modified organisms, along with pesticides, continually come up in conversations among both beekeepers and the public regarding the health of our bees. Randy had already mentioned that he was taking liberties with the schedule, so I suggested that if he wanted to just work the subject into another talk I was sure that would be fine.

But he said he had prepared a PowerPoint on it and was ready to go. And as it turned out, this subject generated the most questions and comments of any of his lectures.



Randy Oliver

DRAPER'S SUPER BEE

We offer fast and courteous service to all beekeepers. We sell beekeeping supplies, containers, bee pollen and honey for those who run short. Order is shipped the same day as received in most cases.

Free catalog on request. Pick up orders at our warehouse must be pre-ordered and picked up by appointment only.

Business hours: Mon-Thurs 8-5, closed 12-1
Brenda and Larry Draper
Draper's Super Bee
914 "S" Street, Auburn, NE 68305 402-274-3725



Crooked Hill Beekeeping

Taking Orders For 2017

Bill & Tammy George
19133 LIV 355
Chillicothe, Missouri 64601

www.chbeekeeping.com

(660) 214-0132

Among the points he made:

- "'GMO' is a meaningless term in biology, because everything is genetically modified," via natural selection and/or human cross-breeding. What has changed are the methods, which are much more exacting and controlled, involving the alteration of a plant's DNA in the lab to add specific traits to that plant.
- For many years, crops have been altered via a process called "mutation breeding", whereby seeds are bombarded with radiation or chemicals to cause mutations. While results can be random and highly unpredictable, beneficial mutations are saved and developed for the commercial market. (Oddly enough, not only are crops resulting from this type of gene manipulation not subject to the intense regulatory scrutiny of GMOs, but some are even certified as "organic".)
- GMOs are in fact the "most thoroughly tested" crops on the market, Randy said, adding, "I have not seen any evidence that GMO crops cause harm to bees."
- While Big Ag companies are commonly accused of foisting GMOs on farmers for profit, Randy said most such cultivars are produced by university or government scientists to benefit small farmers.
- One common GM type is Bt, wherein a gene sequence from a bacterium called *Bacillus thuringiensis* is engineered into the genetic code of the plant. There are many strains of Bt, each targeted to a specific insect pest and binding to a specific receptor in the insect gut and killing it. Non-target species are not affected, and simply digest it as a protein. All of these crops have been specifically tested for safety on honeybees. (Bt is also commonly used in spray form by organic farmers.)

continued on page 8



Four years to live - did Albert Einstein really say that?

Quote Investigator finds no evidence that the famous physicist made dire statement about bees

– Excerpted for space; entire article available at:

<http://quoteinvestigator.com/2013/08/27/einstein-bees/>

Dear Quote Investigator: A dramatic quotation about the dangers of environmental upheaval is attributed to the brilliant physicist Albert Einstein. Here are two versions:

“If the bee disappeared off the surface of the globe then man would only have four years of life left. No more bees, no more pollination, no more plants, no more animals, no more man.”

“If the bee disappears from the surface of the earth, man would have no more than four years to live.”

Some commentators are skeptical about this ascription. Could you examine this expression?

Quote Investigator: There is no substantive evidence that Einstein ever made a remark of this type about bees. Alice Calaprice, the editor of the important collection “The Ultimate Quotable Einstein”, placed the saying in the “Probably Not by Einstein” section of her reference.

The earliest evidence known to QI of a connection between Einstein and disastrous environmental scenarios caused by the disappearance of bees was published in the Canadian Bee Journal in 1941:

“If I remember well, it was Einstein who said: ‘Remove the bee from the earth and at the same stroke you remove at least one hundred thousand plants that will not survive.’”

QI has located no supporting evidence that Einstein made the remark above. Instead, QI has determined that a statement of this type was made by the major literary figure Maurice Maeterlinck in his work “The Life of the Bee” in 1901. The saying was widely disseminated in the decades afterwards. Details are given further below.

In 1966 “The Irish Beekeeper” published a comment ascribed to Einstein that presented the grim four year time limit for humanity. The journal cited a 1965 issue of a French periodical for beekeepers called “Abeilles et Fleurs” for justification of the attribution. This is the earliest evidence known to QI of a connection between Einstein who died in 1955 and the dire time limit:

“Professor Einstein, the learned scientist, once calculated that if all bees disappeared off the earth, four years later all humans would also have disappeared.”

Below is a selected chronological sequence of citations that attempt to roughly outline the evolution of this expression and its conceptual formation. Because this task is difficult and the available information is fragmentary this entry is lengthy. QI is indebted to the pioneering research of Bonnie Taylor-Blake and Ray Girvan who explored this topic and located many important citations including the two given previously.

“No cats, many mice; many mice, no bumble-bees; no bees, no clover; no clover, no cattle; no cattle, no beef; and without beef where would the Englishman be?” - Prof. W. W. Cooke, American Bee Journal, 1887

In 1859 the landmark scientific treatise “On the Origin of Species” by Charles Darwin was published, and it included a section discussing a complex ecological web of interactions between cats, mice, humble-bees, heartsease and red clover. Humble-bees are now referred to as bumblebees, and Darwin pointed out that some important plant species would face extinction if the bumblebee were to disappear:

“Hence, we may infer as highly probable that if the whole genus of humble-bees became extinct or very rare in England, the heartsease and red clover would become very rare, or wholly disappear.”

In 1887 the British Bee Journal reprinted an article from the American Bee Journal that presented a cascade of ecological interactions showing that the population of cattle was dependent on population of cats. The chain also showed that cattle were dependent on bumblebees. Most of the living things mentioned in this passage and the style of reasoning were based on Darwin’s analysis:

“The safety of England depends on the number of cats she keeps. He proves his proposition thus: Without the aid of bumble-bees the red clover could not be fertilised. Bumble-bees make their nests on the ground, where they are the prey of mice. Cats destroy the mice and give the bees a chance to live. Hence he reasons, no cats, many mice; many mice, no bumble-bees; no bees, no clover; no clover, no cattle; no cattle, no beef; and without beef where would the Englishman be?—Prof. W. W. Cooke”

In 1901 the prominent Belgian writer Maurice Maeterlinck published “The Life of the Bee”, and he helped to popularize the idea that the bee was a vital ecological linchpin. The work was originally written in French and was translated into English by Alfred Sutro. Maeterlinck’s reputation grew when he was awarded the Nobel Prize in Literature in 1911. Maeterlinck provocatively suggested that we owed our civilization to the bee, and some readers may have concluded that the extinction of the bee would lead to the collapse of civilization:

“You will probably more than once have seen her fluttering about the bushes, in a deserted corner of your garden, without realising that you were carelessly watching the venerable ancestor to whom we probably owe most of our flowers and fruits (for it is actually estimated that more than a hundred thousand varieties of plants would disappear if the bees did not visit them), and possibly even our civilisation, for in these mysteries all things intertwine.”

The assertion that 100,000 varieties of plants were dependent on the ministrations of the bee for continued existence was spellbinding, and it has been regularly repeated for more than a hundred years.

In 1908 the textbook “Animal Life” spoke of the deep dependence of agriculture and human civilization on bees:



Einstein: Four more years?

Gossip, exaggeration and misattribution did not begin with the Internet

continued from page 6

"The history of flowers would almost be a blank, but for the Prosopis and her vast following; a hundred thousand varieties would disappear if the bees did not visit them; and if we reflect how much human civilisation in its critical pastoral and tribal stages has depended on agriculture we realise how greatly we are indebted to these honey-suckers and pollen gatherers."

In 1914 a Denver, Colorado newspaper repeated the adage that a "hundred thousand varieties of plants" were dependent on bees:

"But that little wild bee, half starved, ignorant, is the ancestor of all the civilized bees. And, what is more important, as the scientists point out, it is probably to her that we owe nearly all of our flowers and fruit. A hundred thousand varieties of plants would disappear from the earth if the bees did not visit them, carrying the pollen."

In 1921 a San Jose, California newspaper reiterated the adage about plants and bees:

"It is interesting to know it has been accurately estimated, that more than 100,000 varieties of our plants would disappear if they were not visited by the bees. Our blossoms-covered valley owes a large part of its wonderful fruition, to the little people of the hive."

In 1939 the columnist Ernest A. Fortin writing in the Canadian Bee Journal referred to the dependence of "one hundred thousand plants" on the bee. He attributed this claim to "one of the most celebrated naturalists the world has ever produced". Indeed, this assertion about the bee has sometimes been ascribed to famed naturalist

Charles Darwin though QI has found no supporting evidence for this linkage. Oddly, Fortin was not referring to Darwin as shown in the important 1941 citation given further below. In this 1939 passage the naturalist was unnamed:

"The bee has a wider range of utility and is, in reality, one of the main keystones of agriculture. One of the most celebrated naturalists the world has ever produced once declared this: Suppress the bee from the earth, and by so doing you will suppress at least one hundred thousand plants that will not survive. Remember that the milk and cattle industry are largely dependent on the bee for the fertilization of the clovers. How many crops of different fruits are dependent on the bee for success? The bee is one of the main links of that wonderful chain forged by nature, and wherever that link is broken, there is bound to be trouble somewhere."

In 1941 Ernest A. Fortin wrote on this subject again in the Canadian Bee Journal. Fortin assigned the remark about plants and bees to Albert Einstein, and this is the earliest known connection between Einstein and the topic of ecological damage caused by bee extinction. Note that this quotation does not directly foretell the speedy doom of mankind:

"Yes, every kind of animal or insect is a link in the endless chain of nature and, if a link is removed, it is a long time before the chain serves again its full purpose. If I remember well, it was Einstein who said: 'Remove the bee from the earth and at the same stroke you

remove at least one hundred thousand plants that will not survive."

In 1951 a group of schoolchildren wrote to Einstein and asked whether there "would be living things on the earth if the sun burnt out," and he replied:

"Without sunlight there is: no wheat, no bread, no grass, no cattle, no meat, no milk, and everything would be frozen. No LIFE."

Note this question and reply did not concern bees; however, Einstein's letter did include a cascade of events that was reminiscent of some passages about bee extinction. Einstein had already been linked by 1941 to a quote about bee loss. So, it is not clear whether this interesting letter contributed further to misattributions.

In 1962 the viewer of an educational film titled "City of Bees" commented on the danger to mankind if the bee disappeared:

"If some catastrophe destroyed all the bees on our planet, some 100,000 species of plants would disappear and man would be hard put to eke out a living."

In 1966 The Irish Beekeeper printed a remark attributed to Einstein that gave a time limit for mankind. This important citation acknowledged the French periodical Abeilles et Fleurs for the quotation. Currently, this is the earliest piece of evidence known to QI containing a time limit:

"Professor Einstein, the learned scientist, once calculated that if all bees disappeared off the earth, four years later all humans would also have disappeared."

In 1971 a syndicated humor column called "The Lighter Side" discussed the honeybee:

"In my Earth Day remarks, I observed that America had created the most complex, highly advanced technology in history. Yet we are almost totally dependent on a measly little flying insect. If anything happened to the honeybee, many of our most important plants would disappear and our entire civilization likely would collapse."

During a 1994 demonstration by beekeepers in Brussels, pamphlets with the saying credited to Einstein were disseminated:

"Crops such as apples, pears, beans and oilseeds need bees for pollination. British beekeepers estimate that 85 per cent of Europe's wildflowers are pollinated by bees and the death of the flowers could have a major impact on wildlife.... It's going to be a chain reaction."

A pamphlet distributed by the National Union of French Apiculture quoted Albert Einstein. "If the bee disappears from the surface of the earth, man would have no more than four years to live. No more bees, no more pollination ... no more men!"

In conclusion, QI has not located any support for attributing a doom-laden statement about bees to Albert Einstein. The first evidence known to QI linking Einstein to an ill-fated bee-less world appeared in 1941. The writer Ernest A. Fortin probably confused Charles Darwin, Maurice Maeterlinck, and Albert Einstein. QI does not believe that Fortin's ascription was deliberately deceptive.

**"Without sunlight there is: no wheat, no bread, no grass, no cattle, no meat, no milk, and everything would be frozen. No LIFE."
- Albert Einstein, 1951**



Fall Conference wrap-up

continued from page 5

- Another GM type is Roundup Ready, which is engineered to be resistant to Monsanto's popular weedkiller of the same name. The farmer can thus spray Roundup on the field and kill the weeds without affecting the crop. This in turn reduces tillage, which saves fuel and protects the soil. The downside is loss of wildlife habitat, as it is now easier to wipe out weeds between fields and along roadsides. To make matters worse, Randy said, many food companies and even government agencies direct farmers to remove weeds and wildlife from crop areas to reduce the risk of E coli contamination.

Pesticides

- "It's way better than it was in the 1970s," Randy said, referring to improvements in the types and application of agricultural chemicals. But where beekeepers used to be very anti-pesticide, the war against varroa has made us the main source of them in our hives.
- The vast majority of toxins we eat are naturally present in plants. Many of our foods were more toxic in their "natural" form, but we've bred most of those traits out over the years. Unfortunately this makes plants more susceptible to pests that did not kill them before.

Bee biology

- The life of the colony is one of *Recruitment* (the raising of new bees) and *Attrition* (the flying off to die of old bees). *Management* (beekeeping) is about maximizing recruitment and minimizing attrition. Successful beekeepers are the ones who have too many bees every Spring. They are "generally the quietest ones, and the ones who drive nice new trucks".
- Nurse bees (3-15 days old) are the only ones who produce the enzymes that make pollen digestion possible. They control protein transfer (to brood and adults) via transfer of royal jelly. Fresh pollen stimulates jelly production.
- Colony development follows pollen availability, not daylight hours or temperatures.
- Winter cluster: Bees on the outside stay at 50°F, heads in cells, "pumping blood from head to tail" to generate heat to the cluster.
- *Spring Turnover*: As long-lived winter bees revert to nurse bees, they become short-lived bees. As a result, the adult population drops precipitously as brood develops to replace them. The challenge is to have enough adults to keep the brood warm. A cold spell during Spring Turnover quickly causes them to run out of protein. They respond by eating the eggs, then the larvae - leaving only the pupae, which need neither food nor warmth. The beekeeper can determine protein levels by checking for wet brood (larvae "swimming in jelly"). If brood is dry, feed pollen substitute immediately.

• *Fall Turnover*: As short-lived summer bees die off, fall bees develop differently, packing their bodies with vitogellin (fat bodies). This allows them to live until Spring Turnover, when they spend the remainder of those reserves on recruitment.

Varroa Treatments

Randy stressed that it is best to keep mite levels down throughout the season rather than have to knock them down from high levels. He briefly shared with us a recent study he has done comparing mite treatments. I did not take down a lot of the details, as he expects to publish results in the near future, but I will report here some of his comments and observations:

- Oxalic Acid: This should be used



Cathy Misko jumps on the opportunity to stock up on supplies for next Spring.



MSBA Treasurer Steve Moeller, at right, keeps track of bids at the annual Queen Auction during the Friday evening banquet. At left, auctioneer Bernie Andrew pauses while Erin Mullins presents a new item for bidding. The auction raised \$1370.00 for the Queen/Ambassador program.

continued on page 9



Fall Conference wrap-up

continued from page 8

during broodless periods, which can be created by caging the queen for 12 days, then releasing her, and treating on Day 19. Randy prefers the dribble method over vaporization, in part because it is quicker (especially important for someone with many hives to treat), but also because it is safer. Too many people use vaporizers without the benefit of a mask, and the vapors are dangerous to humans. He did mention that the downside to dribbling is the need to open the hive.

- **Apiguard:** The active ingredient, thymol, is not water-soluble, and is therefore dissolved in the same gel used in diapers. It spreads not by evaporation, but by the bees removing the gel and dragging it through the broodnest to get it out of the hive.
- **Formic Acid (MAQS)** is the only treatment that kills mites in brood cells. It can be used with honey supers on, but it can cause a brood break and occasionally even cause the bees to ball the queen - though this is usually in weaker colonies. This can be prevented by removing the queen for two days while treating and then putting her back.
- **Oxalic/Glycerin strips.** This was one of the new methods that Randy tested. It shows promise, he said, but is a lot of work and not as good as the old standby, Apiguard.
- **Essential Oils:** There have been a lot of claims about essential oils for varroa control, but there's not a lot of research to back them up. Randy tested a commercially available combination of essential oils (he did not share the brand), and found it wholly ineffective. What's more, he said, bees hate essential oils, which are produced by plants to repel insects.



Vendors Tammy and Bill George, at right, display some of the offerings from Crooked Hill Beekeeping in Chillicothe, Missouri.

"MDA Splitter" Mel Disselkoen credits queen-rearing method for low mite counts

by Cathy Misko

As time has permitted and to protect my investment in bees, I have attended the MO State Beekeepers Conferences for 10 straight years. Each year I treasure gathering with fellow beekeepers to be enlightened and re-booted to help keep my bees using the best management possible. I did miss a few sessions since this trip served a dual purpose, that being a holiday at the luxurious Four Seasons Lodge with my husband. Beekeepers work hard and getting away is well deserved; who can resist the therapeutic opportunity to "re-boot" at the lake, during a full moon, and no chores?

Up my alley, Mel Disselkoen introduced his 25 year chemical free management program of OTS (On-the-Spot) Queen Rearing - proclaiming a low colony loss of 10%, low mite loads, and successful income from selling "starts", honey, and queens. He inspired us all stating, "You cannot get better bees than the ones that you over winter and that survive in your own yard; breed from those queens." When varroa hit the USA bees killing 70%, Mel focused on the "why" the other 30% of bees survived. He concluded the reason was because the bees superseded their queen in July. Mel therefore developed his program of artificially superseding colonies in July (noting that he lives in Michigan). Timing takes advantage of the summer solstice, a time when bees' instinct is to build up (population and honey stores) for winter survival. Queen cells are forced by "notching" brood comb in contrast to grafting or using the Jenter kit. Mel claims that splitting and "starting" a new colony helps with mite control because of the "broodless and droneless" break in the hive. He claims that in his 42 years of making his own artificial swarms by "spitting" he has not had his bees swarm.



Mel Disselkoen answers questions about his On-the-Spot Queen Rearing method during a Conference break.

OTS program's quick and skinny: 1) Start in May when drones are present, 2) Pull the queen to make an artificial swarm, 3)

continued on page 11



Missouri State Beekeepers Association

Spring 2017 Learning Session

A Day with Dr. Jay Evans

the Research Leader of the Bee Research Laboratory (BRL) in the Beltsville
Agricultural Research Center, Beltsville, MD

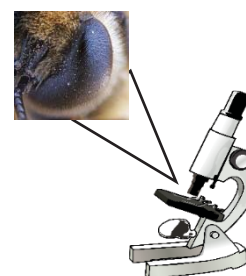
Saturday, March 4, 2017

8:00 am Check-in

9:00 am to 4:00 pm Discussions and hands-on demonstrations

Stoney Creek Hotel & Conference Center
2601 S Providence Rd, Columbia, MO 65203
573-442-6400

<http://www.stoneycreekhoteles.com/hotel/travel/columbia/home.do>



Dr. Evans was an early proponent of the Honey Bee Genome Project and helped recruit and lead scientists interested in applied genomics for bees. He has received the James Hambleton Bee Research Award from the Eastern Apicultural Society (2011), the BA Early Career Scientist Award (2002), and is on the Council of Fellows for the International Bee Research Association. Dr. Evans holds an AB in Biology from Princeton University and a PhD in Biology from the University of Utah. He has served as Acting Research Leader for the BRL since October, 2014.



Dr. Evans joined ARS as a Research Entomologist in 1998. During the ensuing years, his research focused on threats to honey bee health, from bacteria to mites, and on the ways bees and beekeepers can reduce these threats. He published 120 research papers from his work.

Registration is now open until February 15th and seating is limited.
There will be no walk-in registrations for this event.

Cost for this event is \$65.00 for members and \$ 75.00 for non-members and does include lunch.

Visit www.MoStateBeekeepers.org for more information.



Fall Conference wrap-up

continued from page 9

Notch along proper aged and fed larvae (36 hours) in original colony but now queenless, 4) Wait 5 days - queen cells are moved to multiple queenless starts, 5) Original colony becomes production colony, producing 100 lbs of honey if no brood.

Mel communicated a very interesting thought - even when miticides are used and mites fall off the bees, the bees are still left with wounds where mites once were lodged and possibly exposed bees to viral contamination. Mr. Disselkoen claims that the bees get more benefit by broodless cycles preventing mite reproduction.

A detailed instruction book is now available for purchase.

Another benefit of the conference was shopping at the multiple vendor tables and getting "hands on" supplies. I literally filled up a dolly full of equipment to take home, paint, and fill with bees!

As Co-Founder of **Heartland Beekeeping Partnership**, I updated attendees that HBeeP started the ball rolling investigating the possibility to draft legislation to incorporate beekeeping, honey bees, and beekeeping supplies in Missouri Tax Codes to qualify for **sales tax exemption** under Missouri's "farm exemption". I invited beekeepers to contact me with their stories of tax issues and of colony theft/vandalism.

Other Conference speakers

Wes Johnston lectured on the biology and control of the **Small Hive Beetle**. The beetles, he said, are attracted to honey and pollen. They can live for 14 days without food or water, and up to six months on honey. They trick bees into feeding them by rubbing their antennae against the workers' mandibles.

The best defense is a strong colony, but occasionally even that is not enough. Severe infestation results in "slimeout", as beetles tunnel through cappings, causing fermented honey to run out; the colony will eventually abscond.

Beetles survive the winter in the hive, though they reproduce only during warmer months. Infestations can be lessened by placing hives in full sun. Adults do not like light, and dry ground slows reproduction, as the larvae need to burrow into the ground to pupate.

Some control methods include Swiffer or dryer sheets placed in the hive (beetles get tangled and die), traps lined with pickling lime (not pickling salt) as a dessicant, and free range chickens which eat larvae out front.

Wanda Johnson detailed the use of **Oxalic Acid Sublimation** for varroa treatment. Sublimation is the conversion of a solid to gas via a vaporizer. It is very important, she said, to wear protection to avoid breathing the fumes.

Oxalic acid is naturally occurring in plants and leaves no residue in wax.

Treatment must be done during broodless periods, and at temperatures above 40 degrees. Wanda sets up the hive the night before, and treats early in the morning before bees head out to forage. She closes the hive, treats for three minutes, waits another 10 minutes and then reopens the entrance.

Erin Mullins named 2017 Missouri Beekeeper of the Year

As Vice President Clayton Lee introduced the Association's most prestigious award, he described the recipient as "an individual that provides nonstop support and is always promoting beekeeping in Missouri".

Indeed, Erin Mullins has been tireless in her efforts over the past several years. She spent a year as Honey Princess, then another year as Honey Queen. But after stepping down a year ago from the latter position, she did not step down from the MSBA. She remains a fixture at the State Fair, and at our Conferences - serving as Contest Coordinator among other things - in addition to her numerous activities at Northwest Missouri Bee Busters.

Always upbeat, always energetic, she is always a pleasure to have around. Congratulations, Erin!



Wes Johnston



Clayton Lee and Erin Mullins

Local Beekeeping Associations in Missouri

1 Beekeepers Association of the Ozarks

4th Tuesday of each month, 6-9 p.m.
Seminole Baptist Church, 4221 S. National Ave.
Springfield MO 65810
Jeffrey Maddox, President maddox65804@yahoo.com
www.ozarksbeekeepers.org

2 Boone Regional Beekeepers Association

3rd Sunday of month, 3:00 p.m., Columbia Insurance
Group, 2102 Whitegate Dr. (back door), Columbia
President Jim Duever, 573-254-3373 www.boonebees.org

3 Busy Bee Club

4th Tuesday of each month, 7:00 p.m., Cedar County
Health Center, Owens Mill Road, Stockton
Neal Lee 417-276-3090, Neil Brunner 314-276-4252

4 Eastern Missouri Beekeepers Association

2nd Wednesday of each month, 7:00 p.m., location
changes. Bob Sears, President 314-479-9517
www.easternmobeekeepers.com

5 Golden Valley Beekeepers

2nd Monday of each month, 7:00 - 8:30 p.m.
Golden Corral, Clinton MO. Tom McCormick, President
tomm@goldenvalleybeekeepers.com
www.goldenvalleybeekeepers.com

6 Jackson Area Beekeepers

4th Tuesday of each month, 7:00 p.m.
First Presb. of Jackson, 206 E. Washington
Contact Grant Gillard, gillard5@charter.net, 573-243-6568

7 Jefferson County Beekeepers Association

2nd Tuesday of each month, 7:30 p.m., Hwy B & 21
Jefferson County Extension Center, Hillsboro
Contact Marvin Hook 636-274-1759

8 Joplin Area Beekeepers Association

Last Tue. of each month, 7 pm, SM Bank Community
Building (7th and Duquesne Rd), Joplin
Contact Dale Foley 417-850-0285

9 Mid Missouri Beekeepers

3rd Sunday, 2 pm, Old Train Depot, St. James.
Contact Don Moore, dmoore2@centurytel.net
573-265-8706

10 Midwestern Beekeepers Association

Most meetings: Fellowship Hall at Graceway, 5460 Blue
Ridge Cutoff, Kansas City, MO 64133
Visit midwesternbeekeepers.org for meeting calendar
President Bob Williams, thebeltonbee@gmail.com

11 Mississippi Valley Beekeepers Association

Last Tuesday of Month in Quincy, IL
Contact Bernie Andrew 217-938-4975

12 Missouri Valley Beekeepers Association

3rd Monday, 7pm, Union, location varies
President Calvin Brandt cvbrandt@landolakes.com

13 Parkland Beekeepers

3rd Tuesday of month, 7pm, North College Center,
Mineral Area College, Park Hills. Pres. Ray Politte
573-631-8236 PBA_President@mineralarea.edu
<http://www.parklandbeekeepersassociation.org/>

14 Pomme de Terre Beekeepers

2nd Thursday 7 pm, Missouri Extension Office, Hermitage
Contact Rebekah Huddleston Rebekah_421@yahoo.com

15 SEMO Honey Producers

2nd Thursday 6:30pm, Zion Lutheran Church, 450 N.
Main St., Poplar Bluff. Contact Ray Batton, 573-785-1980,
573-778-6475 cell or sbatton6@gmail.com

16 South Central Missouri Beekeepers Association

1st Friday of month, Howell Electric Coop, West Plains
Monty Wiens, President 417 257-3994

17 Southern MO Beekeepers of Monett "MOBees")

3rd Tuesday of each month, 7:00 p.m.
United Methodist Church, Hwy 37 NW of Monett
John Schmidt, President 417-830-9141

18 Southwest Missouri Beekeepers Assn. of Neosho

1st Tuesday of month, Neosho High School FFA Bldg
Contact Thelma Ross 417-472-3504 rtross@jscomm.net

19 Three Rivers Beekeepers

3rd Monday, 7pm, University of Missouri Extension,
260 Brown Rd, St. Peters, info@threeriversbeekeepers.com
President Dwain Jansen 314-910-1251

20 Northwest Missouri Bee Busters

2nd Monday of month, location varies
nwmbeebusters.blogspot.com
beebusters2012@gmail.com

21 Lake of the Ozarks Beekeepers

3rd Saturday of month, 1:00 p.m.
Square Deals Ice Cream Shop, Versailles
Contact Garrett Blackwell 573-374-7402

22 Northeast Missouri Beekeepers Association

1st Friday of month, 7 pm, Clark County Courthouse,
Lower level, Kahoka (location may vary)
(3 miles south of Wayland) Contact Randy Ewart
573-248-5561 rewart@centurytel.net

23 Gasconade Region Beekeepers

2nd Tuesday 7:00, First State Comm. Bank, Owensville
Pres. Rodney Angell (573) 259-5811 bee143@fidnet.com
gasconaderegionbeekeepers@hotmail.com

24 St. Louis Beekeepers

4th Tuesday 6:30, Schlafly Bottleworks
contact@saintlouisbeekeepers.com
www.saintlouisbeekeepers.com

25 Western Missouri Beekeepers

2nd Tuesday 6:30, Moor-View Community Room, Nevada
Caroline Phillips, President 417-321-3587
bcphillips81@gmail.com

26 Meramec Valley Beekeepers

First Sunday 2 pm, Peace Lutheran Church in Sullivan
Contact Sam Elia 573-732-5597 samnora1@gmail.com, or
Laurie Rose at laurierose1219@yahoo.com

27 Quad County Beekeepers

1st Tuesday, 7:00 pm, Missouri Extension Office, Troy
President Eric Reid quadcountybeekeepers.com

28 North Central MO Beekeepers Association

1st Monday, Macon High School, Macon, 7:00 pm
Contact Bill George (660) 214-0132
georges@chbeekeeping.com www.ncmbees.org

29 Bees Alive

(Springfield area) www.beesaliveclub.org
1st Thursday, 7-9pm, Central Bank of the Ozarks, 502 W.
Mt. Vernon St., Nixa MO 65714
Dan Barton, dannyohboy@hotmail.com

30 Wright County Beekeepers

2nd Thursday, Laclede Electric building, Hartsville, 7 pm
Rick Bledsoe, Contact 417-741-7466
wrightcountybeekeepers@gmail.com

(continued next page)

Local Beekeeping Associations in Missouri

(continued from previous page)

31 Rolla Bee Club

4th Sunday 2pm, Brownwood Estates Clubhouse, 1341 California, Rolla
Contact David Draker (573) 578-0561
rollabees@gmail.com www.rollabeeclub.com

32 Swarm Chasers

% MO Dept. of Conservation,
701 McCarthy Dr., St. Joseph
Contact Jason Seetin
swarmchasers@gmail.com

33 Northland Beekeepers

3rd Tuesday at 7pm, Smithville Library-Highway 169
Contact: Clayton Lee at leeland55@gmail.com or
573-864-5172

34 Mark Twain Beekeepers (Dent County)

3rd Monday, 6-8 p.m. No dues. Contact for meeting locations. Contacts: Terry Phelps 573-729-3333
Gregg Tivnan (573) 689-2254 or greggtivnan@yahoo.com

35 West Central Beekeeping Association

Second Wednesday, 6:30 pm
State Fair Community College, Potter-Ewing Ag Ctr, Sedalia
Contact Mike Conroy (573) 301-1394
hunnyhillfarms@gmail.com

36 West Plains Bee Group

3rd Thursday, 6pm Hirsch Feed & Farm Supply,
789 Worley Dr., West Plains
Call Carl Fry 417-247-0708 or Dan Cropper 417-372-2602

37 Greenhills Bee Club

4th Monday, 7pm, American Legion Hall in Braymer
J.R. Hess. 660-233-9577 or jrhess11@gmail.com

38 Dexter Bee Club

1st Tuesday, 6pm, Scott Laden's house
9265 County Road 627, Dexter
Contact Cory Stevens at corystevens00@yahoo.com
or 573-225-6935

39 Iberia Area Beekeepers

3rd Tuesday, 6:30pm. Iberia Library
Contact: Ray Shadow, 573-286-5289 or
trynbeez@outlook.com www.facebook.com/trynbeez/

See our interactive club map on the website at: <http://batchgeo.com/map/e64a9d35b439c5309794fba8516f333>

Portageville beekeeper receives Youth Beekeeper Award

by Gregg Hitchings

Congratulations to Alejandro Reed, who at fourteen years of age was the recipient of the first Missouri Youth Beekeeper Award presented at MSBA's fall conference at Lake of the Ozarks. Although Alejandro had been introduced to honey bees at the age of eight, his interest in the insects and the many aspects of keeping them didn't really blossom until the ripe old age of ten. Fortunately, Alejandro was blessed to have a very capable and willing beekeeper for a mentor. Dr. Ray Nabors has been front and center in encouraging Alejandro along the way. Besides learning and gaining experience in working the bees Alejandro has been active in outreach, taking advantage of opportunities in his community to share information about the beekeeping craft and value of honey bees. Since obtaining his first two hives, Alejandro's apiary has grown to nine colonies. Also growing was the interest of Alejandro's father, Dennis, who too has been learning of bee husbandry alongside Alejandro. Together they have extracted surplus honey crops which Alejandro has marketed in the area.

Alejandro, Dennis and mentor Ray Nabors were able to be present at the MSBA awards banquet where Alejandro was surprised with the recognition.

Other Conference awards

Several other members were honored at the Friday banquet:

Past President **John Timmons** was honored for his years of service, which included modernizing and maintaining the website and membership systems.

Tim Hyde received the Volunteer of the Year award for his work as Conference Vendor Liaison.

Outgoing President **Valerie Duever** was given a Sweet Leadership award.

Outgoing Treasurer and past Secretary **Steve Moeller** was honored as MSBA Officer Extraordinaire.

Dean Sanders was recognized for his ongoing contributions as State Fair Chairman.

Ken Heitkamp was lauded for being named Individual Grand Champion among exhibitors at the Missouri State Fair in August.



Alejandro Reed and Dr. Ray Nabors



MSBA Membership Application

Name _____

My local association is _____

Address _____

City/State/Zip _____

Phone Number _____

Email _____

Dues \$10 per individual

Mail check to: Missouri State Beekeepers Association 401 NW Heady Avenue, Ferrelview, MO 64163

**AMERICAN
BEE JOURNAL**

You Save 25%!

☐ New ☐ Renewal

Prices good through Dec. 31, 2016

Return white copy to: American Bee Journal, 51 S. 2nd St., Hamilton, IL 62341

Association Member Subscription

(Rates listed below are 25% below regular rates.)

	U.S.	Canada	Foreign
<input type="checkbox"/> 1 Yr.	\$21.00	<input type="checkbox"/> 1 Yr. \$37.75	<input type="checkbox"/> 1 Yr. \$45.00
<input type="checkbox"/> 2 Yr.	\$39.75	<input type="checkbox"/> 2 Yr. \$74.00	<input type="checkbox"/> 2 Yr. \$85.75
<input type="checkbox"/> 3 Yr.	\$56.25		

Subscriber's Name _____ Association _____

Address _____ Secretary's Name _____

Address _____ Address _____

City, State, Zip _____ Address _____

Phone _____ City, State, Zip _____

Email _____ Phone _____

Femme Osage Apiaries

Ian & Pamela Brown
 Certified Master Beekeepers
 1407 Sneak Road
 Foristell, MO 63348
 636-398-5014

Pollination Service
 Bees - Honey - Pollen
 Wax - Supplies

**WEAVER'S FAMOUS PACKAGE BEES
and QUEENS****Buckfast & All-American**

BEEKEEPING SUPPLIES AND BEGINNER'S KITS
 THE R WEAVER APIARIES, INC.
 16495 C.R. 319, NAVASOTA, TX 77868

Phone (936) 825-2333

EMAIL: rweaver@rweaver.comWEBSITE: www.rweaver.com



Elsewhere around the state ...

continued from page 4

Proposed Beekeeping Ordinance for Southeast Missouri Community Temporarily Put on Hold

MSBA Southeast Regional Director **Gregg Hitchings** recently learned that a vote was scheduled by the Desloge Board of Aldermen which could dramatically affect a person's ability to maintain a hive of bees within the city limits. Attending the meeting with Gregg were Ray Politte, President of Parkland Beekeepers, and other members of the local association.

They learned that the proposed ordinance which was to be voted on that evening came about not because of any issues, incidents or complaints brought to the city about honey bees, but rather as a result of a city official noting a colony of bees in an area zoned residential. The keeping of bees was only mentioned in Deloge city ordinances regarding agricultural zoned areas. City officials were seeking a way to permit keeping bees within residential areas of their incorporated city but felt certain restrictions were in order for public safety.

Included in the proposed ordinance was the requirement of a permit system and set-back distances from adjoining properties and buildings. A potential beekeeper would also be required to document that permission was obtained from the property owners of all adjoining properties prior to applying for a beekeeping permit.

The Desloge Board of Aldermen was very open to comments from the public when they took up the matter. No one present in the small group that gathered appeared to support or desire the proposed ordinance. The board graciously accepted a suggestion that the vote on the ordinance be temporarily tabled until the Missouri State Beekeepers Association could review the information and provide input to the Board early next year.



MSBA Southeastern Director Gregg Hitchings testifies before the Desloge Board of Aldermen.
photo courtesy of Daily Journal

Directory of Officers

- President: Clayton Lee** 573-864-5172
90 E. Pope Lane, Smithville, MO 64089
president@mostatebeekeepers.org
- Vice President: Bill Allinder** 816-532-0046 (H)
816-550-5800 (C)
vicepresident@mostatebeekeepers.org
- Secretary: Charlotte Wiggins** 573-426-3510
secretary@mostatebeekeepers.org
1001 Bluebird Ln, Rolla, MO 65401
- Treasurer: Wes Johnston** 816-392-4960
401 NW Heady Avenue, Ferrelview, MO 64163
treasurer@mostatebeekeepers.org
- Membership Chair: Wanda Johnston** 816-392-4960
401 NW Heady Avenue, Ferrelview, MO 64163
membership@mostatebeekeepers.org
- Northwestern Director: Roger Nichols**
cell 816-456-6983
northwestdir@mostatebeekeepers.org
- Northeastern Director: Bob Brammer** 660-415-6480
31649 Lake St., Macon MO 63552
northeastdir@mostatebeekeepers.org
- West Central Director: Open**
westcentraldir@mostatebeekeepers.org
- East Central Director: Dan Lake** 636-724-5937
48 Sterling Pointe Dr., St. Charles MO 63301
eastcentraldir@mostatebeekeepers.org
- Southwestern Director: Bruce Snavelly** 417-732-5219
508 Casady, Republic, MO 65738
southwestdir@mostatebeekeepers.org
- Southeastern Director: Gregg Hitchings**
southeastdir@mostatebeekeepers.org
- Program Chairperson: Jim Duever**
2362 County Road 185, Auxvasse MO 65231
program@mostatebeekeepers.org
- Vendor Liaison: Tim Hyde**
tim.hyde@yahoo.com
- Newsletter Editor: Open**
editor@mostatebeekeepers.org
- Webmaster: Open**
- State Fair Chairman: Dean Sanders** 816-456-4683 cell
37804 Old Pink Hill Road, Oak Grove MO 64075
- Queen/Ambassador Chair: Jason Seetin** 386-214-8131
112 N 8th St., Atchison, KS 66002
jason.seetin@gmail.com

Missouri State Beekeepers Association
401 NW Heady Avenue, Ferrelview, MO 64163
www.mostatebeekeepers.org



This newsletter is published six times per year, in even months. Submissions are due by the 15th of the month prior to publication.

The email edition is in color, and contains hyperlinks and bonus back-page material, while the print version is in black-and-white. If you are a member currently receiving the printed newsletter and you wish to upgrade, just send an email to editor@mostatebeekeepers.org with "email newsletter" in the subject line. I'll reply with confirmation, and add you to my list.

Advertising rates are as follows:	Business card size	\$15.00	Half page	\$50.00
	Quarter page	\$35.00	Full page	\$100.00

Classified Ads: Advertise one to three beekeeping-related items in a one-line ad at no charge. This service is for MSBA members only, and is limited to one ad per item per calendar year.