

# Illinois State Beekeepers Association



## BULLETIN


1891-2019



### MESSAGE FROM THE PRESIDENT - Corky Schnadt

When talking with Dr. Adam Dolezal about the upcoming project, BeeScape, that he and Jake Torres wrote about in last month's Bulletin, he put the diversity of the Illinois landscape into perspective. Spring comes to the southern part of Illinois a month before it finally comes to the northern part. Along with this, for the most part, the northeastern part of Illinois is urban and suburban, with farmland in the center of the state, river country and hills in the west and forest in the south, and large tracts of urban and farmland areas mixed in. All of this means it could be very helpful to be part of his project BeeScape, which shows the type of floral resources and pesticides your bees may encounter in traveling from hive to nectar and pollen source. Beescape.org will soon be operational here in Illinois.



 At the time I'm writing this (March 7), you still can't sign up. If you are interested in being notified when it is operational, you can email Dr. Dolezal and his staff at [www.dolezalbeelab@gmail.com](mailto:www.dolezalbeelab@gmail.com), and you will be notified when BeeScape comes online.



Dr. Dolezal and his students are currently visiting clubs explaining how this tool works. For those of you who couldn't attend one of the BeeScape presentations, a video recording of the presentation will soon be available on the website



[https://publish.illinois.edu/illinoisbees/.](https://publish.illinois.edu/illinoisbees/)

Brian Rennecker, Acting Chief Bureau of Land and Water Resources, mentioned to me that he is planning on continuing to have the Apiary Inspectors gather information from hives they visit for Dr. Dolezal's other studies as well. Mr. Rennecker also said the Illinois Department of Agriculture has conducted interviews for the 2019 Apiary Inspectors, and start dates for those inspectors is expected soon.

And I know you have heard about it before, but the Summer Meeting this year in the Northern Region has really come together with great speakers and workshops over the two-day event. I am looking forward to seeing many of you there on June 7<sup>th</sup> and 8<sup>th</sup> at McHenry County College, Crystal Lake, Illinois.

Corky

## ISBA Summer Meeting

June 7 and 8, 2019

### Plan to Attend the ISBA Summer Meeting

This June the Illinois State Beekeepers Association summer meeting will convene in the Northern region. This is the first time ISBA has marshaled a two-day meeting. Not only will it offer the Saturday menu of speakers, but also activities starting Friday at noon. This is an event intended to feed the beekeeper's soul. Here is what you need to know.

The events occur on Friday and Saturday, June 7 and 8, in the Luecht Conference Center at McHenry County College in Crystal Lake, Illinois. Friday afternoon will be invested in four short courses offered by experts in different aspects of beekeeping. These three-hour courses run simultaneously, are limited to ISBA members, and will be limited in size. Early registration would be wise.

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### Friday Short Courses

Open to Members Only

#### ***Darwinian Beekeeping***



*Dr. Keith Delaplane, Director of the Honey Bee Program at the University of Georgia, will spend the afternoon exploring the concept of Darwinian Beekeeping, a concept that is both old and new. In this era of environmental and pest challenges to our honey bees, Darwinian thinking has surfaced. Explore this approach with an outstanding academic and passionate beekeeper. Darwinian*

*thinking can change the way you think of your beekeeping.*

#### ***A Conversation with an Expert***

*Jerry Hayes will run an in-person "Classroom" session. Jerry is an internationally respected beekeeping personality who writes a long-standing column in the American Bee Journal where he offers great, expert advice on everything honey and beekeeping. Participants will be encouraged to send in and bring along questions in need of his expert answers. If you are a regular reader of Jerry's column, you will want to join his class. This will be a marathon afternoon of Q and A with the man who knows the answers.*



**Winning at the Honey Show**



*Jim and Karen Belli have won almost any honey show award one can name. Their expertise has taken them from local county fairs to the most competitive international honey shows. In this afternoon gathering, they will share their ribbon-winning techniques. Bring your jars of honey along and have them critiqued by the best. Honey shows are coming soon!*

**Join the Inspector in the Beeyard**

*Eleanor Schumacher is an experienced bee inspector. In her years of experience, she has opened many hives. In this afternoon gathering, learn how she goes about a professional inspection, and then accompany her as she opens hives. Join Eleanor as she evaluates each colony and develops a management plan. Bring your veil and watch a pro do it.*



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**Friday Evening**

Open to members and nonmembers

Following the short courses and dinner on your own, Friday evening will offer a choice of two panel discussion groups beginning at 7:00pm.

**1. A Gathering of Mead Makers**

*Are you an experienced vintner or do you just have the urge to change your honey into the drink of the gods – mead? You will enjoy the camaraderie of these beekeeping mead makers. Methods will be discussed. Equipment will be on display. The Viking kings made mead, maybe you should, too.*

**2. Are Local Queens the Solution?**

*A panel of local, small-scale honey bee queen breeders will discuss the advantages and challenges of raising northern queens. Recently, locally acclimatized queens have become popular. Hear the whole story from the beekeepers who raise the queens in your neighborhood. (Local queens will be available for sale in the vendors' area on Saturday.)*

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## Saturday

Open to members and non-members

- 0800 Registration begins (eat a donut!)
- 0900 Welcome
- 0915 Comments by Brian Rennecker, IDOA
- 0945 Confirmation Bias and the Beekeeper –  
*Why beekeepers believe what is not true*  
Jerry Hayes
- 1045 Break / visit vendors
- 1100 The Honey Bee Superorganism and What It Means for Beekeepers  
Dr. Keith Delaplane
- 1145 Today in the American Beekeeping Federation  
Tim May, President, ABF
- 1200 Lunch / visit vendors
- 1300 Comments, awards, door prizes, etc.
- 1315 Today at the American Bee Journal  
Eugene Makovec, Editor of ABJ
- 1330 Breeding Bees Superorganismically  
Dr. Keith Delaplane
- 1415 Break / visit vendors
- 1430 Illinois Citizen Scientists and the Varroa Battle  
Jacob Torres. University of Illinois
- 1530 Farewell speeches

Throughout the day vendors will be available including queen breeders with locally raised queens for sale.

## What does it cost?

We have kept the prices down! This is the best value in beekeeping education and a great investment in fellowship. Join your fellow beekeepers for two great days.

### Registration fees

Friday Short Courses	\$10.00 (limited to one course of choice)
Mead meeting	No charge – come join the talk
Saturday	Members - \$25.00 (\$30.00 at the door) Non-members - \$35.00 (\$40.00 at the door)
Preordered Saturday lunch	\$10.00

## How to register

Online registration will begin on Thursday, April 11. The link to the registration site will be posted on the ISBA website - [www.ILSBA.com](http://www.ILSBA.com). Knowing that some might not have access to internet registration, special arrangements can be made by calling Wendy Yemm at McHenry County College (815) 455-8764.

Directions to the College, to the Luecht Conference Center, and to local restaurants and accommodation with special ISBA pricing will be posted on the ISBA website.

**Can you be encouraged to register early? The first 100 to register for our meeting will receive a complimentary (and collectable) ISBA hat. We all need one of these!**



A special note to our “down state” members – This meeting has been arranged to make your trip to the northland appealing. The events will not begin until noon on Friday. We have activities scheduled on Friday and Friday evening, making that a day well invested. Saturday includes a great list of presentation that will end early enough to allow an opportunity to travel home. We are thinking of you. This two-day meeting is worth the trip. Please consider carpooling with your local association beekeepers and join your fellow Illinois beekeepers at this exceptional meeting.

## NOT BLOOD-SUCKERS BUT...FAT SUCKERS?

Edward Hsieh and Adam Dolezal, University of Illinois Urbana-Champaign

It has long been accepted that *Varroa destructor* mites feed on the blood (hemolymph) of honey bees and, in doing so, transmit pathogens and weaken the bee's immune system. This seems intuitive, and we often compare Varroa mites to ticks that feed on humans and livestock. While many studies have shown that mites spread diseases like these human vectors, there has been surprisingly little work studying their diet.

Why would beekeepers and bee scientists think mites fed on hemolymph (insect blood) in the first place? Work done in the 1970s used radioactive isotopes to track mite feeding, but the methods used are now considered inconsistent – specifically, they are not able to tell the difference between blood and fat tissues. Despite this, these studies provided the main view of Varroa feeding biology for decades.

However, a recent study by Dr. Samuel Ramsey, working in the laboratory of Prof. Dennis vanEngelsdorp at U. of Maryland, provides an incredibly in-depth investigation into the diet of Varroa and convincingly shows that Varroa mites do not, in fact, consume blood, but rather feed on the fat bodies of honey bees. This fascinating discovery has since led to a very recent publication in *The Proceedings of the National Academy of Science*, one of the most prominent scientific research publications in the world.

In the first part of their study, Ramsey examined which part of the honey bee's body the mites prefer to feed on and found that they attach almost exclusively located on the abdomen, where there are much higher concentrations of fat body tissue. Interestingly, the mites seemed to overwhelmingly favor the left half of the abdomen, situating themselves at this location for 74.8% of observations—why, still remains unclear. They also provide several high-resolution scanning electron micrographs depicting in startling detail

the exact points of mite attachment, right down to the footpads they leave behind when forcibly removed!

Diving even deeper, Ramsey and colleagues used microscopic imaging to zero in on the mite wound-sites, where they found direct evidence of fat body feeding, seeing partially-digested fat body tissue surrounded by unique Varroa-associated bacteria. They hammered the final nail into the fat-versus-blood coffin by demonstrating in a dietary assay that mites fed a diet with higher proportions of fat would survive longer and produce a larger clutch of eggs compared to mites fed only bee blood.

This finding has major implications for mite control and our understanding of how mites impact bee physiology. First, the fat body is not just fat storage for bees – it is an organ comparable to the human liver and is responsible for detoxification (like of pesticides), producing immune molecules, making proteins, and many other metabolic functions. Damage incurred through mite feeding is certain to have multiple downstream effects on overall bee health. This study also provides researchers important tools in studying mites – we now know what and how to feed them in the laboratory; this will be critical for research into how they spread disease or in developing tools to kill them. Understanding where mites feed on the bee could also help with the development of mite treatments (acaricides) that are uptaken into the fat body instead of the blood and also may underline the importance of nutrition in reducing mite impacts.

If you would like to read the article in its entirety, it is titled “*Varroa destructor* feeds primarily on honey bee fat body tissue and not hemolymph” by Samuel D. Ramsey et al. (2019) and should be available through the PNAS website or via this link: <https://www.pnas.org/content/116/5/1792>

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## BEYOND CLOVER

Eleanor Schumacher

Ah, the countryside in the spring! The smell of freshly turned earth, and cheerful sight of sprouting green rows of corn, beans, and wheat. Illinois has some of the richest, most fertile soil on earth, thanks to the prairies that once covered the land. Only several hundred years ago, before European settlers brought the honey bee to America, when buffalo roamed through fields of native flowers and grasses, hundreds of thousands of insect species co-existed in Illinois prairies, depending on a broad diversity of native plants for food and shelter. When honey bees came to America, there were many different food sources for them to choose from. This is likely one reason why beekeeping was said to be "easier in the olden days". The bees ate better back then.

Honey bees have a "generalist" diet, which means there are many different pollen and nectar sources that provide them nutrition. Bees tend to choose the most nutritious food source available at any given time. As a "keeper of the bees", you may have dabbled in creating honey bee habitat, or enhancing forage areas to benefit your bees. But have you noticed that some days the bees simply aren't interested in the garden you're keeping for them?

I remember visiting a friend who had planted six acres of clover with the idea of maximizing his honey harvest. Right after swarm season, when his managed clover field was lush and full of blossoms, he was frustrated. There wasn't a bee in the field. Though the bees came and went busily from their hives, they disappeared into the sky. Where were they going? After this had gone on for a few days, he called his oldest brother, also a beekeeper. His brother said "Ah! Come see where your bees are." They went for a walk in the woods, stopping in a persimmon grove. There were the bees, finishing up a fantastic persimmon nectar flow. On one hand, this shows how picky and unappreciative honey bees can be, but on the other how predictable their flight paths are. The older brother knew where to find the foragers because he knew all of the different flowers that



honey bees visit. He also knew the succession of when these flowers bloom.

It's well known that clover is a nutritious flower for honey bees, and as beekeepers, we love the mellow flavor of clover honey. Bee researcher, author, and mathematician Eva Crane published several texts examining and quantifying the value of clover nectar to honey bee colonies. In her article "Honey Yields Per Acre of Land" published in Bee World journal in 1951, Mrs. Crane charted 27 favored "honey-making plants". A "Honey Yield" was listed for each plant, expressed in kilogram per hectare. Per her chart, you can figure 1 kg per hectare (ha) is roughly equivalent to 0.9 lbs per acre - so you can fudge the numbers somewhat closely if you're not a math person like Eva Crane was. By her figuring, with the optimum soil conditions, the right weather, and healthy hives, white clover should yield 160 kg/ha. Alfalfa does a bit better at 210 kg/ha. Sour cherry trees could make 80 kg/ha. At the top of her chart was another tree - one that didn't produce nectar, but honeydew instead. A Norway Spruce tree, if populated by the appropriate corresponding aphids, can make 400 kg of honey per hectare (here's where I plug your local county Soil and Water Conservation District Spring Tree Sale - probably going on now. How about planting a few Norway Spruce to see if this is true in America?)

How did Eva Crane come up with these figures? She mentions several scientists, with a focus on Pere Dugat and his method of using "Dadant hives on scales, with ample stores in the brood chamber so that all nectar was placed in the supers. He corrected the weight increases during the nectar flow from the plant during investigation, by deducting the increase in weight on days when that plant was not secreting nectar and the bees were working others. Samples of foraging bees from 30 hives were taken three times a day, and the pollen content of their honey sacs examined in order to check the identity of the plants being worked." At the article's conclusion, Eva Crane admits that while scientists arrived at an estimate of a clover yield, most of this yield is consumed by the hive. In order to maximize a clover surplus, a beekeeper with a five-hive apiary would need 10

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acres of clover under the best conditions, and under poor conditions, would need 10 to 100 times this area.

A lot has changed in science and in beekeeping since Eva Crane wrote her article 70 years ago with its strange math. For one, honey bee colonies have what seem like immeasurable burdens suppressing their honey harvests. Second, agricultural practices have changed, the landscape has changed, and perhaps our perception of our very own hand in nature has changed with everything else. In our own quest for increase (more bees, more honey), it feels natural to apply "building block" ways of thinking and measure our beekeeping success by the gallons of honey we harvest. We might be inclined to spend money on a burlap sack of clover seed, and spend time and gas working the soil to get a good stand of something that is probably growing like a weed in 100 other spots within our apiary's forage area. Meanwhile, in the uncultivated margins of land, our bees are making fools of us. While we chose one flower to rule them all and planted a mono-crop of clover, expecting our "generalist" honey bees to work our clover crop exclusively, our bees exercised their very nature. They remind us of their nature year after year, as they cram loads of every different pollen they can find into vacant cells.

The proteins, lipids, and amino acids found in pollen are the building blocks we should pay most attention to. Bees don't only feed pollen to larvae, but they eat it themselves. Pollen is especially important to young nurse bees as they develop their hypopharyngeal gland (where royal jelly is made), as well as their fat bodies, where vitellogenin is stored. Vitellogenin regulates bee genes that control longevity, immune response, and also serves as antioxidants that bees can use when needing to detox. Bees put away this pantry of pollens every year, yet many of us beekeepers take offense. Some of us go so far as to wash out the pollen-bound comb to make room for more brood and hopefully more honey. It would be interesting to compare hives that were managed to avoid pollen-bound comb to hives that were allowed to store excessive amounts of pollen. Which hives would need to be fed more during the winter? Which hives would survive winter the strongest and build up well in the spring?



I ask these questions because I am skeptical when I hear beekeepers complain about pollen-bound comb. I do agree - there is something unsettling, watching comb fill so quickly with pollen, and watching bees stamp the pollen down so tightly in the cells, and then cover it with a sheen of honey. I admit I don't like to see that at all! But if you have ever had an unusually busy summer and fall that didn't allow you to meddle with their pollen hoarding, you may have noticed that the bees tend to sort-out this surplus of pollen by themselves - at least my hives tend to move the pollen along. By spring, I can see they've consumed all of this ugly pollen and have made room for all of the fresh varieties!

If you're considering planting clover this year, why not add some native wildflowers to the mix? If you're not ready to go all out and restore a prairie, how about adding some easy-to-grow flowers with pollen that bees love. Partridge pea is a very valuable flower for wild life and honey



bees. It has a long mid-to-late summer bloom that offers nectar too. New England aster is another fantastic pollen source, with a beautiful flower. Partridge pea and New England aster are easy to grow, and could be combined with some other easy beginner-prairie flowers like sweet coneflower, wild bergamot, lance-leaf coreopsis, greyheaded coneflower and stiff or showy goldenrod (not tall or Canada goldenrod which are too aggressive). To give these wildflowers some support, plant some little bluestem and sideoats grama grasses. These easy native species are a great way to dabble in pollinator habitat - and would get along very well with clover in a mix.

When we plan our bee forage schematics, we may end up with a better honey yield not by focusing on nectar availability alone, but by considering the whole season, the whole forage area, and the whole bee. Healthy bees make more honey, and seeing them perched on beautiful blooms, gathering their own meat-and-potatoes might make you enjoy your hobby even more.



## ASSOCIATION SPOTLIGHT Lake County Beekeepers Association



Lake County Beekeepers Association (LCBA) is one of the largest, non-farm, beekeeping clubs in northwest Illinois. With around 150+ members, we have a strong group of back-yard beekeepers, yet also draw some larger, beekeeping professionals to our club.

LCBA has hosted a number of innovative approaches to raising interest in Beekeeping. For our newer beekeepers, about 4 years ago, we started a 'NewBeez Group'; we host a series of hands-on sessions throughout the year to help them better manage their hives. Anyone who thinks that they can use a refresher is welcome to join the NewBeez!

Our annual Hive Opening will feature 6 of our more veteran beekeepers working individual hives and sharing their insight and beekeeping methods with our members. We follow that with a large social gathering. This year, we included tastings of 9 different honey-based liqueurs.



The LCBA has developed programs with a number of local groups including, Boy Scouts, Master Gardeners, Vacation Bible Schools, Girl Scouts, 4-H Clubs, Cub Scouts, and Home Schooled Kids. Quite often LCBA members can be found teaching sessions at their local school or library. Annually, we support the Lake County Fair with a large booth that attracts many a new beekeeper.



With mead making a growing topic, our LCBA hosts an annual Mead and Cheese Tasting Session, with a how-to session and featuring 25 different meads and cheeses from around the world. We also host an annual picnic, inviting beekeepers from other clubs to join us

at this fun event.

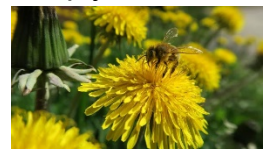
Our LCBA meets on the first Thursday of the month, and we draw some of the best national and even international speakers to our sessions. Along with the Lake County honey bees making some of the best, award-winning honey in the US; our LCBA is also known as the club with the best looking beekeepers!



## A LITTLE BOOK ON MAKING INCREASE

Larry Krengel

Although live bees in your beeyard when spring breaks is becoming more rare, those stalwart colonies that survive our Midwestern winter will present us with a challenge... simply because they have a head start on the bees we bring in as nucs or packages. They have been raising broods for more than a month, and their numbers will spike early. If you have been feeding them sugar water, they will be even stronger yet when the dandelions bloom.

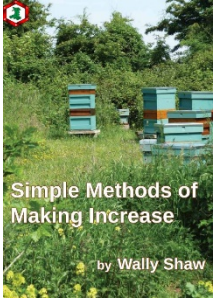


The problem? The urge to swarm, one of the eternal challenges to the beekeeper. We can just let it happen. We can try to stop it. Or we can make a preemptive split... as a real beekeeper says, "Make an increase."

When would it be wise to make that increase? The dandelions tell us. When the dandelions bloom, the bees will accept the split well.

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There are many ways to engineer the increase. It takes a bit of beekeeper insight to choose the best method based on what is found in the parent hive.



Consider making the increase. Wally Shaw, a beekeeper from the UK, has written a short book on the subject – *Simple Methods of Making Increase*. He is using the British National Hive that is a bit different from our Langstroths, but the techniques carry over well. Wally has allowed his local beekeeping association (the Welsh Beekeepers Association) to make his book available online –

<http://www.wbka.com/wp-content/uploads/2015/02/Simple-methods-of-making-Increase-Final-reduced1.pdf>

If you would like to have a hard copy to read as you sit in your rocking chair waiting for that soon-to-arrive time in the beeyard, Abe Books has copies available for a small price -

[https://www.abebooks.com/servlet/SearchResults?an=shaw&bi=0&bx=off&cm\\_sp=SearchF- - Advtab1- \\_results&ds=30&recentlyadded=all&sortby=17&sts=t&tn=simple%20methods%20of%20making%20increase](https://www.abebooks.com/servlet/SearchResults?an=shaw&bi=0&bx=off&cm_sp=SearchF- - Advtab1- _results&ds=30&recentlyadded=all&sortby=17&sts=t&tn=simple%20methods%20of%20making%20increase)

Beyond just giving directions to make an increase, Wally makes a case for the importance of locally adapted bees. In the last few years, beekeepers have begun talking about Darwinian beekeeping – basically, honey bees have developed localized subspecies that are most successful in specific microclimates. The ISBA summer meeting coming up in June will include talks from Dr. Keith Delaplane on Darwinian thinking in the beekeeping world. Perhaps Illinois beekeepers could learn from the long-gone Charles Darwin.

Beekeepers from the United Kingdom, like Wally, have become very outspoken about the importance of the locally adapted bee, in their case *Apis mellifera mellifera* (AMM). AMM is the honey bee originally brought to North America by the colonists in the 1600's. It is also the bee Americans lost interest in when beekeepers began importing Italian bees (*Apis mellifera ligustica*) and Carniolian bees (*Apis mellifera carnica*) in the 1800's and found them better suited to our beeyards.



To many Brits, Brother Adam, who imported many bees to England as he developed the Buckfast bee, brought in genetics that damaged the locally adapted AMM. These foreign bees, they suggest, are not well acclimated to the British climate. Some are attempting to redevelop the native localized AMM using local increases to fill their losses. Wally's book speaks to this effort.

Back to the original thought, what to do with that strong overwintered colony? Perhaps making an increase from it would not only address the swarming riddle, but also help promote the locally adapted bees working your forage. Interesting. Wally has written a good little book. Consider reading it. Consider making an increase.

# ARE YOU A BEEKEEPER LOOKING TO BEELONG?



ABF has been making a difference for 75 years to ensure the future of the honey bee. Our members share a common interest in better education, sharing information, and protection of the industry.

## BE LONG



### EDUCATION

Information and ongoing learning is the key to surviving as a beekeeper today.



### COMMUNITY

Success in the business of keeping bees requires networking with those in the industry who are leading the way to the future.



### ONE VOICE

From working with the USDA, EPA and other governmental organizations, to making sure the industry is front and center, ABF is your voice.

[BEELONG.ORG](http://BEELONG.ORG)



Illinois State Beekeepers Association  
PO Box 21094  
Springfield, IL 62708

Membership in the Illinois State Beekeepers Association is open to all persons interested in bees and beekeeping. Beekeepers are urged to join through their local Associations or individually if no local Associations are available. Dues are **\$10** for the calendar year January 1 – December 31 only. Dues include a subscription to this newsletter, the ISBA Bulletin.

Make checks for membership payable to: ISBA and mail to: Illinois State Beekeepers Association – Membership, PO Box 21094, Springfield, IL, 62708

Address changes: Send old and new address six weeks prior to date of change when practical to the Association Secretary. At-large members can email the change to the ISBA Membership Director at [spetrilli45@gmail.com](mailto:spetrilli45@gmail.com)

### **American Bee Journal**

**\$23.80** – 1 year

**\$45.05** – 2 years

**\$63.75** – 3 years

<http://www.ilsba.com/links.html>

(888) 922-1293

### **Bee Culture**

**\$25** – 1 year Print Edition

**\$15** – 1 year, Digital Edition

**\$48** – 2 years, Print Edition

**\$69** – 3 years, Print Edition

**\$20** – 1 year, BEEKeeping Your First 3 Years

[www.beeculture.com](http://www.beeculture.com)