



Kelley Beekeeping

SERVING THE BEEKEEPER SINCE 1924

ISSUE 53: JANUARY 2015



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The Buzz

by Kevin Harrub

January 2015! What an exciting year we have before us! This year Kelley Beekeeping anticipates BEE FEVER to be at a **FEVER** pitch! Some folks may think it's early, but now is the time to start thinking about the 2015 bee season. With that in mind, here are some items to get you thinking and excited about the fun to come this spring...

Our FREE SHIPPING program has changed for 2015—and I believe you are going to love the new change. Last year, as we celebrated our 90th anniversary we offered FREE SHIPPING on most orders over \$200.00. Don't forget there are some restrictions... This year, beginning January 9th, 2015 we will offer FREE SHIPPING with a minimum order of \$150.00! Yes - you can now get FREE SHIPPING on most orders when your purchase exceeds \$150.00. Now that is something to be excited about!



Kelley 3lb. Packages, (5) Frame NUCs and Queens: Now is the time to order your 3# packages and NUCs! This year our retails are as follows:

ITEM DESCRIPTION	RETAIL	PICK-UP OR SHIP DATES
3# Package w/Italian Queen	\$110.00	April 4th, 11th, 18th, 25th, May 2nd, 9th, 16th
3# Package w/Russian Queen	\$114.00	April 4th, 11th, 18th, 25th, May 2nd, 9th, 16th
Marked Queen	\$ 3.00	

ITEM DESCRIPTION	RETAIL	PICK-UP DATES
(5) Frame Deep NUC w/Ital. Queen	\$180.00	April 11 & April 18th
Marked Queen	\$ 5.00	
(5) Frame Deep or Med. NUC (unmarked)	\$200.00	May 2nd

ITEM DESCRIPTIONS	RETAIL	SHIP DATES
Italian Queens	\$26.00	April - September
Russian Queens	\$30.00	April - September

Additionally, something else to keep in mind—we will be offering 10% off all Kentucky Specials ordered on-line in the month of February 2015. That's right—you save 10% when you use the **PROMO CODE: KHIVE** when ordering online.

For those new to Beekeeping, 101 and 201 Beekeeping Classes are being offered 1st and 3rd Saturday of each month, January, February and March. You can find class information at www.kelleybees.com or give us a call at 800-233-2899. So if you are a "local" (someone within 200 miles) and you need some good beekeeping education be sure to contact us for more information.

The Buzz *continued*

Have you ever wanted to operate your own beekeeping business? Be sure to check out the information included in the attached Dealer brochure and give us a call! Generate an income, meet cool folks and help **SAVE THE BEES** in a business that benefits everyone involved.

Reminder: It is winter and in some geographic areas the temperatures are running below 32 degrees. For those new to beekeeping, you may not be aware that Kelley Beekeeping Company will not ship wax when the temperature falls below 32 degrees (unless specifically requested by the customer with an understanding that Kelley Beekeeping will not be responsible for damages incurred from shipping during freezing temps). Shipping wax when the air temp is below freezing can cause wax to arrive fractured, chipped and broken. So—if you have ordered wax and it's below 32 degrees between us and your front door, don't expect your wax until there are 2-3 days of above freezing temps.

Lastly, this issue is chock full of wonderful the ride of the honey bees to the almond groves, your bees of American Foulbrood naturally, and


Bee Fever – Catch it!

Kevin Harrub

Kelley Beekeeping




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Are you new to Beekeeping? Or looking to expand your knowledge of Bees? You are in luck!

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Beekeeping 101:	Beekeeping 201:
• January 3 rd 2015	• January 17 rd 2015
• February 7 th 2015	• February 21 st 2015
• March 7 th 2015	• March 21 st 2015



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From the Queen's Court

by Melanie Kirby

HAPPY NEW YEAR...and all that jazz! Jazz...what is JAZZ? One definition as a transitive verb is that it means lively, and to accelerate. And indeed, it is that time of year—an acceleration of attitude, of resolutions, of hope and optimism. It is the turning of a page; a new chapter; and the start to a glorious season of keeping bees as a livelihood and commitment to service.



Last month's issue, I shared some of the things that I've been reflecting on graciously. This month, I'd like to share some of my resolutions and strategies I have for accomplishing them. Having hosted my first intern last bee season, I came to the realization that it is the future beekeepers of tomorrow who are in dire need of mentorship today. Times have changed so much since I began keeping bees professionally 18 years ago. And boy, have I learned and continue to learn! If I can help mentor those who are interested in pursuing apiculture as a profession and career choice in a positive way, then I'd like to assist. My own personal list of mentors is never ending. It starts with my mom and family, friends, the bees and beekeepers and of course, Mother Nature.

I plan to start an internship program where those interested can apply to come and live on my bee farm for the season and learn how we crawl out of winter, bounce into spring, somersault into summer, flip into fall and wind down into winter with our queen breeding and apiceutical ventures. Apiceutical is the term my husband has given to our developing line of medicinal honeys, beeswax balms and royal jelly products. Which bring me to my second resolution: farm diversification and research.

Having started our bee farm from scratch—meaning we didn't inherit any tools, trucks, bees or other necessary farming items, I know firsthand how expensive and also how time consuming it can all be to get going...especially when developing breeding lines



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Editor

Melanie Kirby

Editor@KelleyBees.com

Website & Ecommerce

KelleyBees.com

Address

807 W. Main St.

P.O. Box 240

Clarkson, KY 42726

Phone

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Queen's Court *continued*

based on longevity...it all takes time...and money! And though I have more time than \$\$, I also have motivation and articulation that helps me to find and secure grants to pursue some of the interesting research that is taking place in my area. This past year I started sharing more of our queen stock and bee products with researchers for their analysis.

The data they discover will help to define clean honey and pollen for the FDA and other university institutions. If what I've shared proves to be as awesome as I think it is, then I'll be able to translate that into higher end product lines; and ones which will help to heal human and animal life forms. My goal for this coming year is to find more adventurous professional beekeepers who are dedicated to the cause of producing healthy and high quality products—whether that be queens and bees or honey and other beehive products so that together, we can help steer the demand and supply for less toxic, naturally derived health and wellness for our communities. Which communities, you ask?

Well, LOCAL to GLOBAL is my response. Not everyone starts with the same circumstances so it is indeed, not a fair practice to judge others...as they could surely judge me unknowingly. As the age old adage shares, you can't judge anyone objectively unless you've walked a day in their shoes...and that is what I intend to do...not to judge, but to better understand, interpret and support others and their causes for a better outcome. Having consulted with beekeepers near and far to witness and interpret what sort of beekeeping management paradigms might work beneficially, I've been given the blessed opportunities to walk in others shoes for a short bit; to see the world through their eyes and through their cultural perspectives, and to better assess what their immediate and long term goals are and how to help them plan to achieve those goals. Why am I interested in this, you ask?

The answer is simple: we are all in this together, for better or worse and more importantly, it is because of the respect and reverence I have for the bees. The bees are the ones who will ultimately suffer if we don't get our acts together and build a more positive network



A beekeeper of tomorrow.

for their and our benefit. Science is proving this common sense. Individually, we each do what we can; like worker bees who divide the labors of the hive to care for young, gather resources, feed ourselves and protect our families. Collectively, like a super organism akin to a beehive colony, we can support parents and families, feed communities, and protect our resources for now and future generations.

I am of mixed heritage and one of the key things that that aspect about myself has made clear for me, is that all cultures, all origins, all perspectives, are valid to those who perceive and agree to them. There is no one single way to keep bees, nor is there any one single way to parent or govern a nation. There are definitely some methods that are more effective; and even some that are positive or negative. But all in all, the differences are what make the world go round and I'd like for it to keep revolving and evolving.

This comes down to how we support others- whether through engaged mentorship, education and outreach or service. My farm's 10 year anniversary will take place this year. And I know for a fact that without the support of others, this anniversary wouldn't be a reality. But it is! And thus, from the service of others, I am learning to serve back and have high hopes of reaching 20 years of farm service. For in serving others, we serve creation; and creation is above, behind, outside and inside all of us and our bees!

My editorship for this newsletter is evolving. I am keen to gather more diverse content and perspectives to share with the Local to Global audience that subscribes to it. I'd like to begin to include several new sections on biodiversity to include researcher profiles, additional pollinators and their health; permaculture; plant identification; and apitherapy. Diversifying the educational outreach components of this newsletter will encourage me to write more and to connect with other authors to share diverse information and strategies for bettering ourselves as bee stewards and citizens of our planet Earth. We only get out of it what we put into it...so let's put our minds and hands together for a better today and tomorrow!

As we learn to serve, may each beekeeper and bee, light the way to prosperity. Here's wishing you and yours a very prosperous New Year and bee season to come!

At your service—
Melanie Kirby
Email: Editor@KelleyBees.com

Melanie has been keeping bees professionally since 1997. She resides in the northern mountains of New Mexico where she and her family breed survivor queenbees, provide pollination and outreach services and produce exquisite desert-alpine honeys and apiceuticals. Her farm, Zia Queenbees Farm & Field Institute—is celebrating a decade of service this year—something which makes her feel humble and encourages her dedication to the industry.



If you have a question you would like to share, email it to Editor@KelleyBees.com

A•Bee•Cs

Beginning Beekeeping

by Phill Remick

Strategic Planning for Apiary Location

Beginning beekeepers have so many concerns occupying their bee-fuddled minds! First and foremost is deciding exactly where to place the apiary. Here is a basic strategy for planning this crucial endeavor.

Are there other colonies in the area? Take a spin to see if you can spot any existing apiaries within flying distance, say 2 miles or so from you. Know what competition you have for floral sources.

It takes about one acre (!) of blooming flowers, trees and shrubs for one colony to prosper (of course this is an approximation—actual acreage will vary). By using this rule of thumb, you can determine if there is enough sustenance for your bee pals to make a living in their new neighborhood.

Lets' do the numbers: With packages, the average number of bees per pound is 3,500. If you purchase a four pound package, roughly 14,000 bees instantly become dependent on your expertise or lack thereof. Add a second or third package and the numbers rise dramatically. That's a lot of mouths to feed! Mistakenly, many believe that generally possessing (or living near) a yard full of wild growth is adequate forage. Mark Twain once remarked, "It ain't what you don't know that gets you into trouble. It's what you know for sure, that just ain't so."

New beekeepers will benefit thoroughly from understanding local weather cycles - including wind patterns; floral sources; time and duration of bloom; length of bloom and of utmost importance, whether plants are dependable pollen and quality nectar sources. Do your best to avoid acreage known for pesticide applications or field 'hotspots' which have a history of being doused with chemicals. If your bees reside in this type of surrounding, get acquainted with growers, spray applicators and the bee inspector/county AG office: it is time well spent. Also, have a plan in case you need to move your apiary.

What about water? The majority of us don't have a sparkling, babbling brook running through our desired apiary area. Fresh water is a must; you may



Placing the apiary.

ABeeCs *continued*

have to provide this resource if not readily available (babbling brook optional). In the heat of the summer, honey bees require close to one gallon per day, per hive.

Your bee yard ideally will be an area with good drainage, in mostly open air and protected from extreme winds. It must allow easy, unrestricted entry during all seasons. If you have access to property with a locked gate—perfect! Place the bees where they have the least amount of visibility by humans (which can deter vandals), yet with plenty of sunlight. It's just human nature; once neighbors spot beehives, any negative action that can be attributed to your colonies is imaginable. Keep your apiary away from out-buildings that are in regular use, farm equipment and avoid any populated, common space. Pools are another obvious issue, never, ever place bees near a swimming pool! I call this my 'Out of sight—out of mind policy'.

Finally, don't forget, we also want to face colonies east or south east. Honey bees require direct sunlight in the morning and if possible, partial afternoon shade during the most intense heat of the day. Consider implementing this mode as the colony can warm up early in the morning, getting all the foragers out and about which can increase your chances of a substantial honey crop.

Phill Remick has kept bees professionally since the 70's. He offers sage advice and instruction to those in need in the Albuquerque metro area.

Visit Phill's site at www.newbeerescue.com



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Just the FAQs

by Dennis Brown

Hello Everyone,

Fall and winter pests, such as field mice, should be of concern to many beekeepers. Hives make an excellent shelter for the lonely mouse during the fall and winter months. Once entry has been made by the mice, they will fest on pollen, honey, wax, adult bees as well as bee larva if available. They will destroy the comb by burrowing through it and sometimes building a straw nest inside. If the damage isn't too bad, the bees will repair it in the spring time. The problem is that when the bees repair the damage, they will usually build drone comb in those areas instead of worker comb. The mice will poop and pee inside the hive which makes it very difficult for the bees to clean up the mess.

The best solution is to take preventative measures. Install a mouse guard ahead of time. Kelley sells these in their catalog. Or, you can make a homemade guard. The down side to using a mouse guard is that during the winter months, there is usually a pile up of dead bees on the bottom board. The house bees will not be able to carry these dead bees through the mouse guard for removal if the temperature warms up enough for the bees to take flight. One option would be to provide an upper entrance so the bees had another way out should the dead bees block the lower entrance.

Unlike up in the northern states, Texas winters are rarely an issue. It is usually freezing one day and then the next day it's in the sixties. So, mice have not been a big problem. We reduce our entrances to a two inch opening and leave it at that. The bees are still active for most of our so called winter days. Mice don't like mixing with active bees so, they will usually leave the hive alone.

Enjoy your bees!
Dennis Brown

Dennis Brown is the author of "Beekeeping: A Personal Journey" and "Beekeeping: Questions and Answers," both of which are sold here at Walter T. Kelley Bee Supply. Contact Dennis at www.lonestarfarms.net.



CALL FOR PHOTOS: Want to see your bee related photo on the cover of the Kelley Beekeeping newsletter? Send entries to editor@kelleybees.com & your photo could be selected for a future issue.



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X•Y•Zs

Advanced Beekeeping

by Stephen J. Repasky, EAS Master Beekeeper

Happy New Year...and welcome to Spring!

Spring you say? It's January, there is snow on the hives, ice on the lakes and everything is as dormant as it gets; yet on many calendars, January does not equal spring! Now, we are not talking about the traditional calendar we all use to keep track of days and weeks, we are talking about the beekeeper's calendar.



Beekeepers are different in many good ways and our calendar is too. January is not too late to be thinking about the coming spring season and the tasks at hand in the weeks and months ahead. Depending on your location in the United States (or the world for that matter) January means different things. Our friends in Australia are in the midst of their summer—but that doesn't make us feel better about the thermometer reading outside right now. Of course, as I sit here typing this, it's a couple of days before the holidays and it is supposed to go into the 60's here in Pittsburgh, PA tomorrow—I'm happy for that as the bees need a good cleansing day. At the beginning of this new year, I'll be heading to Anaheim, California for the American Beekeeping Federation Conference and Tradeshow and many of my fellow beekeepers will be talking about moving their hives into the Almonds orchards for (or is it Amonds?!) for spring bloom a couple of weeks after that!

So what does spring on the beekeeping calendar mean to YOU? We can look at this in three ways: first, as a new beekeeper anxious to get into this fascinating hobby; second, as a beekeeper in your first year hoping your bees survive their first winter; and then, as a beekeeper with a couple or more seasons under your belt.

As a beginning beekeeper that has yet to keep bees, one of the biggest

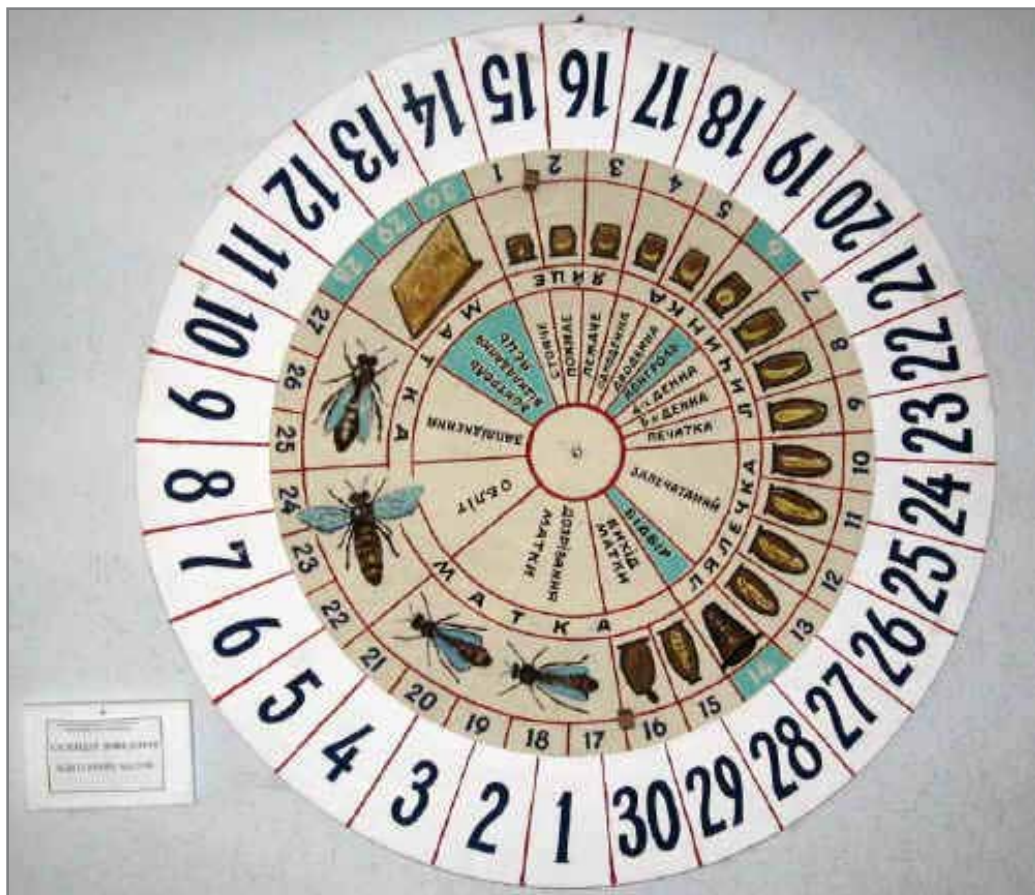


Beekeepers in the almond orchards.

mistakes you can make is waiting too long into the year to get your equipment, bees and an apiary site to place your new hives. Every year in April and May, I get calls from folks interested in starting with bees that particular year and they have read some “stuff” on the internet and they thought it would be “a good time to get the bees started since there are a lot of flowers out there for them to eat”. Well they are certainly correct about there being a lot of forage, but where they missed the boat was obtaining everything they need to get started. In teaching classes here in the Pittsburgh area, we cannot stress the importance of reading as many books on beekeeping that you can get your hands on prior to getting bees. The *Beekeepers Handbook*, by Diana Sammataro, is a good one for beginners.

Taking a class (no matter how much you have read) is also a VERY good idea. These classes are often taught by beekeepers with many years under their belts and can provide a lot of good information that may not be fully explained in a book. Ordering equipment now is also a good idea. This will allow you plenty of time to receive the shipment, put everything together, paint/stain it and make sure you understand how everything goes together. Sometimes bee supply companies get so busy that orders may get placed on back order and the last thing you want is for your bees to arrive the same day or later than your equipment will be arriving!

Speaking of bees arriving—NOW is the time to order your packages or nucs. Kelley's is taking orders now for spring bees so get your order in while there is still availability. Beekeepers that supply starter nuclei also sell out VERY quickly and sometimes waiting until February or March is way too late and you will be scrambling to find bees. Don't try to hedge your bets on catching a swarm to get started on beekeeping unless you know a beekeeper who manages to capture quite



A beekeeping calendar.

a few, as your chances of coming across one before they find another home is slim.

As a beekeeper who has already got their bees started and anxiously awaiting spring, now is the time to really think spring! Sure its time to order more bees, additional equipment, find new sites for your additional hives; but what about your bees? When was the last time you checked in on them or saw them take a cleansing flight? This is the time of year that, on a warmer day (so as not to disturb the cluster or break the temp/respiration rings) you may want to peek under the cover to see if your bees have moved up through their stores to the top—requiring emergency food. Or maybe they are still down low and in good shape.

You can place your ear to the side of the hive and knock on the hive to see if you hear a buzz—a stethoscope can be useful in this situation. A quick lift of the inner cover to blow your breath down in between the frames will get a hum from the colony if they are still alive (again being sure that it is on a warmer day). These are just precautionary steps in making sure your bees survive. But what to do when they do make it through until the spring!? A common time to breathe that big sigh of relief is when dandelions emerge. THAT is when you know your bees should survive. You will need to think ahead NOW.

Do you have enough equipment? Are you going to split this hive? Are you familiar with the process of splitting a hive? How do you know if you colony is even strong enough to split? Just because they survived doesn't necessarily mean that they are strong. Increase Essentials by Dr. Larry Connor is an excellent source for this time of information. You don't want to be caught flat footed without the knowledge or equipment to deal with your bees coming out of winter. Plan ahead!

Then there are the veteran beekeepers; those who have had bees for several years and have had success in getting bees through the winter. Keep in mind—having bees for several years doesn't mean that we know it all; it just means that we have made more mistakes than those who have kept bees for less time! We too, must be aware of what is ahead even though it may be below freezing and snowing in some parts of the country. The size of your operation will determine a lot of what you need to be concerned about when thinking "spring" on the beekeeper's calendar.

Right now in Florida, they are getting ready to graft the first batch of queens. Here in the northeast, I'm getting ready for making splits and grafting queens...not that I will be physically doing it now, but I'm going through my list. How many queen cups do I have, are my nucs fully stocked with frames and foundation, are my mating yards still accessible or do I need to clear away fallen trees? The list goes on and on and sometimes it seems to never end!

All in all, though its January, looking at spring on the beekeeper's calendar isn't too bad. We put our bees to bed a couple of months ago and things have slowed down for the most part other than honey

sales, teaching classes, attending conferences, cleaning and repairing old equipment, lining up new outyards, putting together new supers, answering the phone from new beekeepers wanting to get started, checking hives mid-winter for survival, catching up on the past 9 issues of Bee Culture or the American Bee Journal and skimming through the pages of the Walter Kelley bee keeping supply catalog wondering if you have enough of this, that and the other thing...

And before you know it, the bees will be bringing in pollen and building up nicely and you'll be wondering where you put that copy of Swarm Essentials by yours truly that you got for Christmas! In our often fast paced world that we live in, it is sometimes too easy to look at a calendar and say "I've got plenty of time." But make sure you are looking at your beekeeper's calendar so you aren't caught realizing you are three months behind in your preparations! Happy Beekeeping and I hope that 2015 will be that much more enjoyable and successful as a (prepared) beekeeper!

Stephen J. Repasky is a second-generation beekeeper and author of Swarm Essentials. He is the owner of Meadow Sweet Apiaries and is very active in the beekeeping community at the local, state and national levels. He can be reached via his website at www.meadowsweetbees.com



Kelley's Beekeeping 101 Classes

January, February and March

The first Saturday in January, Kelley's offers a class to educate new beekeepers and enhance the learning of those who are more experienced. The class which begins at 9:00 am CST and ends at approximately 4:00 pm is held at the Clarkson, KY facility. There will be a morning and afternoon break and a 1 hour lunch break (restaurants are within reasonable driving distance). The fee for this class is \$30.00 per person and the class size is limited to 50 people. If weather permits, we will do a live inspection of an active hive. These classes will be taught in December, January, February and March.

Class Dates:

January 3, 2015

February 7, 2015

March 7, 2015

Topics:

- How Beekeepers Keep Bees
- Basic Honey Bee Biology
- Hive Terminology / Beekeeping Equipment
- Hive Assembly / Location
- Bee Sources / Installation
- Hive Inspections / Best Beekeeping Practices
- Common Beekeeping Problems
- Queen Problems
- Nutritional Issues (feeding)
- Varroa Mites
- First Year Management



For more information:

www.kelleybees.com/Shop/1/Hives-Components/4690/Kelley-s-January-Beekeeping-101-Class



Beekeeping class at Kelley Beekeeping.

Bee Health

The Consilience, Part III

Management Strategies for Supporting Bee & Human Health

by Melanie Kirby

Last month's Bee Health section featured a most informative article on Honeybee Nutrition by Dr. Zachary Huang and the Managed Pollinator Coordinated Agricultural Project (CAP), which was originally published in 2010 in both the American Bee Journal and Bee Culture magazines.

Dr. Huang's article is explicit and shares a plethora of information on the details of honeybee nutrition. As persons who manage honeybees for pleasure and livelihood, it is important for us to be cognizant of our bees' dietary needs and intakes. Recognizing which plants are providing nutritious forage and which are toxic can help stewards to better manage and strategize for their livestock's well-being.

Understanding that the available forage in a given area will dictate who and what can survive there, beekeepers can locate resources, situate apiaries and facilitate the health and productivity of their colonies—whether that is one or many. Of course, managing for a single hive requires much less time and provisioning but, regardless of the count of hives, beekeepers must be observant of their apiary location, saturation levels, and environment. While the world does need more beekeepers and bees, it sure doesn't benefit from having them all in one place, whether that be wild, rural or urban settings.

For those unfamiliar with what saturation levels are, they are the maximum levels in any area which can support only a certain amount of organisms—depending on the available resources. In other words, if hives are overcrowded in urban areas or in rural areas, there will be more competition for forage resources. If forage resources are limited, then honeybees will not obtain the necessary levels of carbohydrates, proteins, amino acids, minerals and water, as shared by Dr. Huang's Honeybee Nutrition paper. And it can be extrapolated that other species of bees and pollinators (requiring similar substances in their diets from nutritious levels of forage) will also be adversely affected.

The start of this series of "The Consilience," which was first published in Kelley Beekeeping September 2014 issue where I shared some of my rising thoughts on the critical integration between habitat and health. I stated that, "The needed consilience or multidisciplinary approach will bring together beekeepers, land stewards, researchers, industries and communities together to preserve and promote positive management plans for healthy bees and pollinators."

Is this possible? And who will take responsibility and be held accountable? The answer is quite simple—for it involves EVERYONE. Each of us has to be held accountable for how our land, air, water and resources are maintained, managed and preserved for now and future generations.

Bee Health *continued*

So, is it possible for beekeepers, land stewards, researchers, industry and communities to come together to preserve and promote positive management plans? Yes—and emphatically! We see that with the rise of non-profits and government funded programs and projects that are keen to network and to set a precedence on policy affecting pollinators. We also see big money trying to redirect some efforts or veil them scientifically, politically and socially so that common sense is being compromised by a demand for “facts.”

But what are facts...and what is fiction? Our reality is what we make it. And while science can emphasize what is already occurring, it can be limiting in that it requires time; and guess what... time is what we and our bees can't spare when it comes to our health. “Facts” won't mean much if we aren't around to verify them. Neither will fiction, except that if we don't stand up for common sense (which is termed thus because everyone has the capacity to understand these unwritten and unproven truths), then we are turning a blind eye to the reality as we know it and are just as guilty as those who are compromising the truth for their own monetary gain.

So, WHO will take responsibility? When all is said and done, we won't be able to point fingers at those who are no longer in charge or present. So the better question is, Who is present? Who can represent? Who can speak for the bees and the trees and the many other environmental concerns that are increasingly approaching desperate states of living? And the only conclusion I can reasonably come to is that, we are all present- each and every single one of us. And thus, it is with every single rational mind, that will need to become engaged and to be proactive in preserving, protecting and promoting healthy forage, and landscapes, for our bees, and for our communities.

Apiaries, are communities. They are spheres that intersect with the spheres of wildlands, farms, villages, towns and cities. Each of these spheres in and of themselves is a universe unto its own... but they only exist because of their interaction with their surroundings. These intersecting spheres make up our whole planet. As to whether they extend beyond that in some material or ethereal form, is of another query...but it can be assured that everything is integrated and involved- for good and for bad.

Ensuring that our bees have the needed forage and supplementation (when applicable) is paramount to establishing health, longevity and productivity. If each person decided to plant a pollinator friendly plant or tree, just think of how much more habitat could be created?! The next obvious question is where to plant? And while the majority of our nation's population lives



Bee Health *continued*

in urban settings, the majority of food for the cities comes from outside of its area. Even the bees that are being shipped east and west, north and south, are coming from outside the urban areas.

I propose a national effort, should urban hobbyists consider participating, and that is to develop regional honeybee and native pollinator breeding programs so that healthy organisms are developed from within. Sustainable management requires such. For only when we consider habitat both near and far, can we then look to provide what the bees need, both near and far.

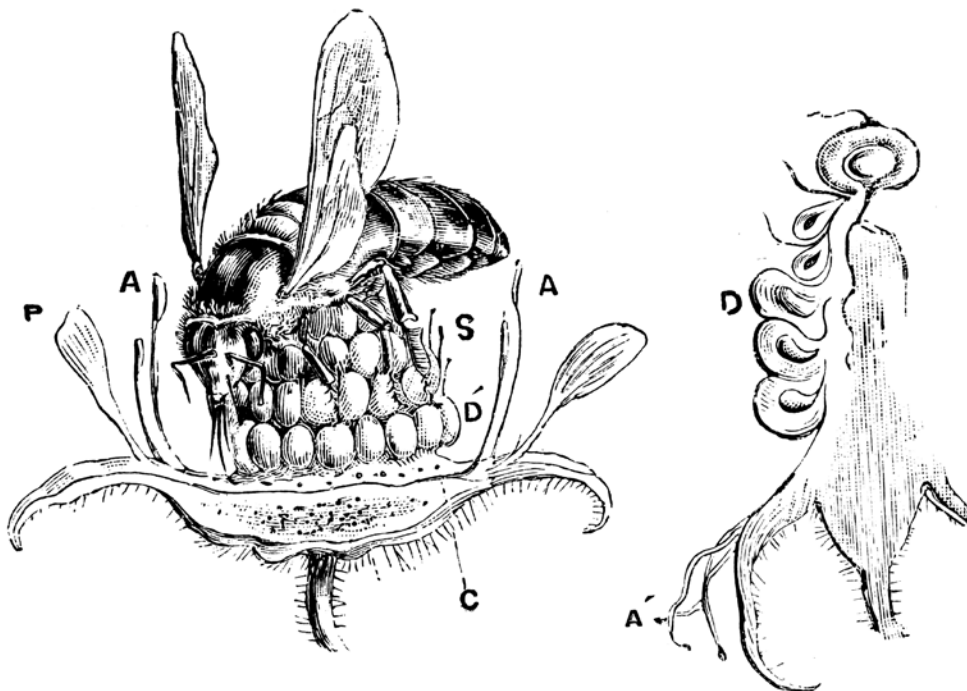
Next month, I will continue "The Consilience"—as I refer to it, with a slideshow of one of my presentations on our Angels of Agriculture and their habitat needs and how it translates into their and our own health. May it provide food for thought on how to grow more healthy food. I will conclude this third part with gratitude....

I am so very thankful to the bee farmers who grow and share bees. I am so very thankful to the scientists who are avidly working to discover the details on honeybee health and management. And I am the most thankful for the bees, who put up with human indiscretion and have survived millenia—may they prosper into the future.

As our bees prepare to feast this coming spring, how will we help to set their table? Let us come together in a consilience of thought, intention and action to bee healthy!

For a beautiful video on pollination, visit
<https://www.youtube.com/watch?v=MQiszdkOwuU>

Melanie is the editor of this informational Kelley Bees newsletter. She has been keeping bees professionally for over 18 years, starting as a U.S. Peace Corps Volunteer in South America. For the past decade, she has been specializing in survivor stock queen breeding- promoting longevity based management of healthy and resilient stock. She encourages discussion and can be reached at editor@kelleybees.com



To the Almonds! It's Super Bee!

**Copyrighted & Posted by Don Studinski
on Selene River Press Blog**

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The netting might be relatively opaque and difficult to see through, but you can be sure that there are millions of living honeybees riding on the trailer. When the truck says something about honey, bees, or apiaries, what's riding is probably live insects.

The annual massive movement of honeybees toward southern California has begun. If you're a traveler on our interstate highways, you may encounter an 18-wheeler loaded with hundreds of honeybee hives. You may not recognize it, but the trailer will be covered with a large net to contain the flying bees. Look closely and you'll see that under that net are honeybee hives. Why is this hive movement necessary? In a word: almonds.

As Richard Waycott, CEO of the Almond Board of California, was quoted by the Sacramento Bee: "We would not have an almond industry if we didn't have bees. . . . We're joined at the hip with the beekeeping industry."

A few essential facts about almond crops go a long way toward explaining why growers are so dependent on the beekeeping industry. Almonds are actually stone fruit eaten as nuts. The trees don't tolerate wet soils, so they do very well in the central and southern portion of California. Coming into full bloom in February, almonds are the earliest stone fruit bloomers. They require cross-pollination, which means they fail to produce fruit if self pollinated (self-unfruitful) or if cross-pollinated with an incompatible tree (cross-unfruitful). This situation calls for honeybees. Or, if I could play a little superhero sound bite, "This is a job for Super Bee!"

As explained in an article titled, "Beepocalypse Redux" published May 07, 2013 in Time magazine, there are approximately 2.5 million living honeybee colonies in the United States today. Of those, about 1.6 million are needed (and necessary) to pollinate almonds in California. That's 64% of all the honeybees in the nation that are needed in central and southern California for the almond bloom. Furthermore, the number of almond trees is increasing.



To the almonds! Photo by Hackenberg Apiaries, used with permission from Dave Hackenberg, commercial beekeeper.

To The Almonds *continued*

Those honeybees will be coming from all over the United States. These living insects can survive a few days without additional food because they have honey and bee bread stored inside their hives. But while in transit, bees cannot survive extended periods without water. According to commercial beekeeper Jeff Anderson, depending on the humidity and the temperature, the driver may have to make multiple stops simply to find water for the bees (which is accomplished by spraying the whole trailer with water). This is why some border crossings provide fresh water sprays where the drivers can give the honeybees a drink along their route.

This is a tricky business for beekeepers. Before the almonds bloom, there's little or no forage for the bees in the target area. On the one hand, they must be in California in time for the almond bloom. On the other hand, if they get there too early the honeybees may starve. Of course, artificial feeding is an alternative, but not ideal nutritionally.

Many of these hives will be placed in southwestern states as a staging area before the short move to California. Sideline beekeeper Tom Theobald explains that the bees are moved to these staging areas starting in October and continuing through December. In January, they make the final move to the almond orchards. The bees must be there and ready to work in February.

A colony that's ready to work is a colony with eight or more frames of bees. A good guess is about 3,000 workers per frame (including both sides). If we assume each colony is made up of approximately 24,000 workers, we need 38.4 billion honeybees to successfully pollinate the almond crop. That's a lot of working bees.

All this planning, breaking down, loading, moving, setting up, feeding, watering, and contracting happens behind the scenes—rarely noticed or even thought of by the typical citizen. And yet every one of us is very much dependent on that work getting done. Even if you don't eat almonds, you probably do eat some fruit or vegetable which these insects will pollinate later in the year.

It's a ton of work to bring you the food you eat. The question is, what's it worth to you?

Don Studinski, doing business as Honeybee Keep, is a permaculture enthusiast and member of the board of directors at Living Systems Institute (LSI), where he applies permaculture philosophy to beekeeping. Honeybee Keep manages Colorado's first Certified Naturally Grown apiaries: LSI in Golden and Cottonwood Farm in Boulder. As a beekeeping mentor, Don provides advice and counsel for students throughout the United States, teaches classes and performs public speaking events. He writes extensively about beekeeping on his own website and for a variety of others, including Bee Culture magazine, Peak Prosperity & Honeybee Haven.



Honeybee on almond blossom.

Bee Science

Researchers find natural way to fight honeybee-killing bacteria

There are all kinds of diseases and other problems that are hurting honeybees. One of them is a bacterial infection called American Foulbrood and it's been a problem for bees around the country for decades. The disease kills bee larvae and can lead to the entire hive collapsing.

Researchers at Brigham Young University have come up with a natural way to fight back. They're using a kind of virus — a phage— that infects and replicates within a bacterium.

"This is using nature in order to fight nature, basically," says Sandra Burnett, an Associate Professor of microbiology and molecular biology at Brigham Young University in Utah.

"We see phages naturally in the environment, so what our goal has been is to find phages that will infect this bacteria, and capture [these phages] and have them ready to actually do an attack and kill the bacteria for us."

Inspiration found in her own backyard

Burnett is a backyard beekeeper and has a few hives at her house.

"I knew that this bacterial infection was a problem in beehives and I decided I wanted to use this as our target bacteria and see if we could find phages to solve this problem in bees," she says.

Bryan Merrill, a senior at BYU, was there to help. He found out about Burnett's research while taking a course called "Phage Hunters." He joined the project shortly after.

"We found, right now we have identified, about four [phages] that work pretty well [at treating American Foulbrood]," he says. But he says more testing is needed to determine how effective it will be as a treatment.

"We're still in the preliminary studies right now but this is what we've seen: we put these phages on beehives and we notice an improvement," he says. *"It's really, really good."*

A lock and key

"They work like a lock and a key. The phage is the key and the bacteria has a specific lock on it. So one particular phage can only infect one type of bacteria, generally speaking." — Bryan Merrill, student researcher.

Merrill says phages hone in on a specific bacterium.

"Phages are really, really natural and they're really safe. They work like a lock and a key. The phage is the key and the bacteria has a specific lock on it. So one particular phage can only infect one type of bacteria,

Bee Science *continued*

generally speaking."

Merrill points out that phage treatment is incredibly specific to the bacteria researchers want it to kill, unlike antibiotics, the current standard treatment for American Foulbrood.

"When you treat a beehive with antibiotics, it'll knock down the population of all the healthy bacteria that bees need to survive, as well as the Foulbrood bacteria."

Researchers in a 2012 study found that bees have a small and well-characterized number of gut bacteria and the widespread use of antibiotics has created resistance in some strains of Foulbrood. Merrill emphasizes that phages are different: *"They get in, they do their job, they multiply until the bacteria is gone and when the bacteria is gone, the phages just disappear without a sign."*

FDA approval needed

To make this treatment more widely available, first Burnett and Merrill need FDA approval because the bees are used to pollinate plants that go into food for human consumption. It's a long process. Burnett says the FDA not only requires safety testing, which they're already doing, but also efficacy testing.

"That means we actually need contact with beekeepers that have infected hives, so we can get the number of treatments and the percentages of our success rate. The data is needed in order for us to continue to process the FDA papers."

For an audio file on this research, visit:

<http://michiganradio.org/post/researchers-find-natural-way-fight-honeybee-killing-bacteria>

For a great video clip of this story and research, visit:

https://www.youtube.com/watch?feature=player_detailpage&v=rj9_QGBJN0w



Bee Science

Organic mulch lets insect pollinators do their job

Newspaper plus grass clippings provides beneficial habitat for squash bees, increases plant growth in zucchini

COLUMBUS, OH - As interest in organic agricultural and horticultural practices continues to grow, so does the need to identify alternative weed control practices.

Mulching, a common practice used to control weeds and reduce the need for tillage, can also reduce insect pollinators' exposure to harmful pesticides; however, finding the right mulch materials that allow pollinators to flourish can be challenging. Caitlin E. Splawski, from The Ohio State University Department of Horticulture and Crop Science, researched the effects of several types of organic mulch on squash bees, an important pollinator of squash, pumpkins, and gourds. "Crop pollinators that use agricultural fields for nesting deserve consideration," Splawski said. "Zucchini squash has a high pollination demand, and the native, ground-nesting squash bee (*Peponapis pruinosa*) provides the majority of the crop's pollination requirement in some environments."

Splawski explained that squash bees nest directly in crop fields, and their nests can be disturbed by tillage and other management operations. "Squash bees are a solitary, ground-nesting species that produce one generation per year. The females make one or more nests per season, usually directly under the squash plants from which they forage," Splawski said that squash bees are highly sensitive to insecticide applications and tillage because they locate their nests in squash fields and have no noncrop host plants in most of their range. "The use of mulch for weed control could alleviate some incidental risks posed to pollinators by herbicides and tillage, but could also have negative consequences for squash bee populations," she noted. "Mulch applied to the soil surface acts as a physical barrier to weed emergence and could



*A squash bee (*Peponapis pruinosa*) visits a pumpkin (*Cucurbita pepo*) blossom in an experimental plot.
Photo by Caitlin Splawski.*

Bee Science *continued*

similarly prevent bee nesting."

Splawski and scientists from The Ohio State University designed field and greenhouse studies to compare the effects of nontillage weed control methods including polyethylene black plastic, woodchips, shredded newspaper, a combination of shredded newspaper plus grass clippings, and bare soil (control) on soil characteristics, squash pollination and fruit production, and squash bee nesting. The study appears in HortTechnology. Results showed that mulch type had specific effects on pollinator and crop performance, and suggested that certain types of mulch may be more conducive to squash bee nesting than others. "We found that squash bee nests were located within bare soil, newspaper, and newspaper-plus-grass plots, indicating that these mulches did not prevent nesting," the researchers said.

Analyses revealed that shredded newspaper combined with grass clippings is an effective mulch material with no apparent negative impacts on squash bee nesting or on squash floral resources and pollination. Splawski noted that the newspaper-plus-grass mulch also improved plant growth and fruit production, "possibly from an addition of plant-available nitrogen, or the presence of preferable nesting ground."

###

The complete study and abstract are available on the ASHS HortTechnology electronic journal web site: <http://horttech.ashspublications.org/content/24/5/527.abstract>

Founded in 1903, the American Society for Horticultural Science (ASHS) is the largest organization dedicated to advancing all facets of horticultural research, education, and application.

More information at ashs.org

Original Article:

Mulch Effects on Floral Resources and Fruit Production of Squash, and on Pollination and Nesting by Squash Bees

Caitlin E. Splawski, Emilie E. Regnier, S. Kent Harrison, Karen Goodell, Mark A. Bennett, and James D. Metzger

HortTechnology 24:535-545.

Corresponding author. E-mail: csplawski@gmail.com



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Bee Thinking About Mexican beekeepers vs. Monsanto

Beekeepers and indigenous groups in the Mexican state of Yucatán recently won an important court decision against Monsanto. A district judge overturned Monsanto's permit for commercial planting of RoundUp-ready soybeans in the state.

The judge found that "co-existence between honey production and GMO soybeans is not possible," given European restrictions on imports of honey contaminated with GMO pollen. The court also took regulators to task for ignoring the constitutional requirement to consult with indigenous groups on decisions affecting their territory.

According to an in-depth article in *The Guardian*, Mexico is the world's sixth biggest producer and third largest exporter of honey, with more than \$54 million (U.S. dollars) worth of product exported to the EU in 2011. The Yucatán region produces an estimated 40% of the country's honey, almost all of which is exported to the EU.

The overturned permit had authorized Monsanto to plant RoundUp-ready soybeans in seven states, on more than 625,000 acres of land. Mayan farmers and beekeepers challenged the 2012 decision in court, with support from a number of groups including the National Institute of Ecology, the National Commission for the Knowledge and Use of Biodiversity and Greenpeace.

The recent ruling follows on a similar decision by the district court in the state of Campeche in March 2014, which also reprimanded agriculture officials for bypassing consultation with indigenous groups required under the Mexican constitution. A similar case is pending in the state of Chiapas.

While Monsanto will undoubtedly appeal the decision, for now beekeepers and indigenous groups in Mexico are celebrating the moratorium on GE soybeans in Yucatán as a hard-fought, significant victory.

Posted on the Pesticide Action Network of North America website—visit their website at www.panna.org for more information.



The International Year of the Farming Family

Bee Thinking About

Can organic crops compete with industrial agriculture?

Study finds smaller than expected gap in yields between organic and conventional farming

Berkeley - A systematic overview of more than 100 studies comparing organic and conventional farming finds that the crop yields of organic agriculture are higher than previously thought. The study, conducted by researchers at the University of California, Berkeley, also found that certain practices could further shrink the productivity gap between organic crops and conventional farming.

The study, to be published online Wednesday, Dec. 10, in the Proceedings of the Royal Society B, tackles the lingering perception that organic farming, while offering an environmentally sustainable alternative to chemically intensive agriculture, cannot produce enough food to satisfy the world's appetite.

"In terms of comparing productivity among the two techniques, this paper sets the record straight on the comparison between organic and conventional agriculture," said the study's senior author, Claire Kremen, professor of environmental science, policy and management and co-director of the Berkeley Food Institute. "With global food needs predicted to greatly increase in the next 50 years, it's critical to look more closely at organic farming because, aside from the environmental impacts of industrial agriculture, the ability of synthetic fertilizers to increase crop yields has been declining."

The researchers conducted a meta-analysis of 115 studies - a dataset three times greater than previously published work - comparing organic and conventional agriculture. They found that organic yields are about 19.2 percent lower than conventional ones, a smaller difference than in previous estimates.

The researchers pointed out that the available studies comparing farming methods were often biased in favor of conventional agriculture, so this estimate of the yield gap is likely overestimated. They also found that taking into account methods that optimize the productivity of organic agriculture could minimize the yield gap. They specifically highlighted two agricultural practices - multi-cropping (growing several crops together on the same field) and crop rotation - that would substantially reduce the organic-to-conventional yield gap to 9 percent and 8 percent, respectively.

The yields also depended upon the type of crop grown, the researchers found. There were no significant differences in organic and conventional yields for leguminous crops, such as beans, peas and lentils.

"Our study suggests that through appropriate investment in agroecological research to improve organic management and in breeding cultivars for organic farming systems, the yield gap could be reduced or even eliminated for some crops or regions," said the study's lead author, Lauren Ponisio, a graduate student in environmental science, policy and management. "This is especially true if we mimic nature by creating ecologically diverse farms that harness important ecological interactions like the nitrogen-fixing benefits of intercropping or cover-cropping with legumes."

The researchers suggest that organic farming can be a very competitive alternative to industrial agriculture when it comes to food production.

"It's important to remember that our current agricultural system produces far more food than is needed to provide for everyone on the planet," said Kremen. "Eradicating world hunger requires increasing the access to food, not simply the production. Also, increasing the proportion of agriculture that uses sustainable, organic methods of farming is not a choice, it's a necessity. We simply can't continue to produce food far into the future without taking care of our soils, water and biodiversity."

A National Science Foundation Graduate Research Fellowship and a Natural Sciences and Engineering Research Postdoctoral Fellowship helped support this research.

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- February 10, 2015 — Honey bee biology — Dr Tom Webster
- February 24, 2015 — Pests & diseases, medications & treatments — Laura Rogers
- March 10, 2015 — Hive management, feeding & nutrition, early pest detection, apiary location — Tammy Horn
- March 24, 2015 — Hive components & choices, clothing, tools — Lake Cumberland Beekeepers
- April 14, 2015 — What to look for during hive inspection, installing package bees, wintering your colony, swarm capture — Matt Wilson
- TBA — Hive inspection, queen marking — Dorothy Morgan

Registration \$25
Limited to 50 participants
Time: 6 to 8:30pm
Place: Pulaski Co Extension
Service office

(606)679-6361
Beth.Wilson@uky.edu

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2) Go to <https://www.surveymonkey.com/s/KY8YSW3>
to complete an online survey

3) Call Kevin Harrub at 800-233-2899 ex. 236

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Address _____

City _____ State _____ Zip Code _____

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Phone _____ Cell _____

1. How many years have you been a beekeeper? _____

2. Are you teaching or mentoring beekeepers? YES / NO
If yes, please provide details: _____

3. Have you ever operated or owned your own business? YES / NO
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4. Are you an active member of your local or state beekeeping
association? YES / NO
If yes, please provide details: _____

5. I would run this business out of my:

☐ Home ☐ Barn ☐ Out building ☐ Store front

Please provide details: _____

UPCOMING EVENTS

January 2015

California: North American Beekeeping Conference- Disneyland Resort
Anaheim, CA
December 6-10, 2014
For Info visit: www.abf.org

California: American Honey Producers Association 46th Annual Convention
January 6-10, 2015
Manhattan Beach, CA
Info: <https://ahpanet.site-ym.com/?2015ConventionReg>

Georgia: Metro-Atlanta Beekeepers Association featuring Jennifer Berry & Dr. Jamie Ellis
Saturday, January 17, 2015
7:45 AM- 5:00 PM
Info: http://www.metroatlantabeekeepers.org/beekeeping_short_course.php

Texas: Austin Area Beekeepers Association
January 17, 2015 - 9:00 am- 4:30pm
Austin, Texas
Info: <https://www.eventbrite.com/e/austin-area-beekeeping-seminar-registration-13207823957>

Arizona: American Association of Professional Apiculturists – American Bee Research Conference in conjunction with the Apiary Inspectors of America annual meeting.
January 22-23, 2015 - Tucson, AZ
Info: <http://aapa.cyberbee.net/>

West Virginia: Mid Ohio Valley Beekeepers Expo 2015
January 31, 2015
West Virginia University - Parkersburg, WV
Info: <http://www.movba.org/expo2015.html>

February 2015

New Mexico: NM Beekeepers Association Annual Meeting featuring Dr. Marla Spivak
February 6-7, 2015
Kosmos Performance Space
1715 5th Street
Albuquerque, NM 87102
Info: www.nmbeekeepers.org

Georgia: Georgia Beekeepers Association Spring Meeting
February 14, 2015
Lake Blackshear Resort & Golf Club
Lake Blackshear, GA
Contact: GinaG@mindspring.com
Tel: 404.467.7932 or 888.467.7932
Info: www.gabeekeeping.com/events.html



We'd love to share news of your upcoming events. Please send the event name, date, website and/or contact information to me by the 10th of each month for inclusion in the following month's issue. Editor@KelleyBees.com

You can save shipping costs and sales tax by placing a pre-order before any meetings that we attend (excluding events in KY). We note on our website which meetings we are attending, and we'd love to meet you there to deliver your equipment.