Kelley Beekeeping

SERVING THE BEEKEEPER SINCE 1924

ISSUE 60: AUGUST 2015

IN THIS ISSUE

From the Queen's Court

by Melanie Kirby

This summer has been a surprise full of rainbows from the monsoon rains, and learning opportunities. It all started with a call from Carl Chesick, Founder and Director of the Center for Honeybee Research, based in North Carolina. Carl established the CHBR in an effort to promote beekeeper led field research and educational services. Mr. Chesick has invited me to attend and present at a conference he has put together called, Our Planet in Balance: Bees, Fungi and Man. This symposium will be taking place next month on Sept. 26 near Asheville, North Carolina.

In addition to this symposium, Carl is also eager to share the Center's **5th Annual International Black Jar Honey Contest**. With entries from over 22 countries, this is the opportunity for all you beekeepers to showcase your honeys and win the coveted prize of prestige, and a $1500 award. Deadline is October 15th so get your honey sent in now! More info on both the Center for Honeybee Research September special event and the Black Jar Honey contest in the Bee Thinking About section of this month's newsletter.

I am very excited to be visiting North Carolina and learning from the other presenters. The consilience is occurring- the gathering of inquiries and experiences from various disciplines. These are exciting times to participate and I encourage all stewards to learn from each other and build comb- extending state lines and regions and connecting the field to the science to nature and back again. By combining resources and collaborating, efforts can become more comprehensive and also translate into the various disciplines.

Another learning opportunity also presented itself this late summer. I was recently contacted by Liz Walsh, a graduate student from Dr. Rangel's Texas A&M Bee Lab. Liz is an exceptional student, first learning about beekeeping from a WI Honey Queen while working in an apple orchard. Liz is currently working towards earning her

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Want to see your bee-related photo on the cover of this newsletter? Send photos to ***editor@kelleybees.com***

Queen's Court *continued*

PhD. In Entomology. She is a 2015 recipient of the American Beekeeping Federation's graduate research student awards.

Liz contacted me asking if she would be able to come rear some queens at my farm. The wet spring weather curbed queen rearing in Texas; and Liz, a dedicated researcher and student is eager to move forward in her studies. I understand the timing constraints and told Liz that we welcome her visit and are eager to learn from her as well. My farm's remote location in the southern Rocky Mountains puts our queen rearing season among one of the most isolated and shortest. While we face volatile spring start up weather, it is the summer rearing up in the mountains that we truly enjoy. While others are already done with their queen rearing, we are hitting our summer stride and will ride the flow through mid September rearing queens—Mother Nature willing.

The corn is as high as....

Another learning opportunity manifested this summer when we were invited to present at a Farm to Table to Mountain Sustainable Sunday Dinner event at The Bavarian Lodge & Restaurant in Taos Ski Valley. Executive Chef Orly transformed our honey into an exquisite 3-course meal featuring a lip smacking spearmint vinaigrette on a melon salad, a red chile honey glaze on short ribs, and a goat cheese comb honey cheesecake with fresh raspberries. All the ingredients were sourced locally. It was the first time that I had presented during a dinner service and it encouraged conversation between the patrons, the farmer and the restaurant. Connecting farms to mouths has never tasted so good!

This issue will provide a full and informational read. From reader responses to Phill Remick's Raw Honey/Raw Milk comparison to the American Bee Research Proceedings and a project to empower Afghanistan women by training them into entrepreneur beekeepers, and a delicious blueberry salad with honeyed balsamic vinaigrette—this issue is a feast for your eyes and palettes. Enjoy!

Blessed Bee,
Melanie Kirby
Email: editor@kelleybees.com

Melanie Kirby has been keeping bees professionally for 19 years learning from bees in 5 states, 4 countries and 2 continents. She looks forward to traveling this fall to a variety of conferences and presenting on her farm's 10 year case study of a survivor stock longevity based queen breeding program. You can see and visit with her at this year's Center for Honeybee Research Sept. symposium, WAS-CO in early October, and at the French Queen Breeders Association Normandy conference in November.

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

A•Bee•Cs

Beginning Beekeeping

by Phill Remick

BEE-ATTITUDES

You're causally strolling the back 40 when, bam! Out of nowhere a stinger pierces your right cheek. Someone's got a bad attitude!

Attitudes of honey bees vary dramatically dependent upon environmental conditions and seemingly astrological positions of the celestial bodies. In other words, no one is really certain what the colonies occupants are considering at any one specific point in time. There are general guidelines though. I suggest we all bee-aware and attempt to understand and honor the **Bee-Attitudes** of a hive.

BAD BEE-ATTITUDES

1. Bees bouncing off your veil (warning you to keep a safe distance) may be caused by:

- Bumping or moving hives
- Using an overabundance of smoke
- Smoker fuel which is petroleum or wax based (cardboard)
- Leaving colonies open too long
- Inclement, cold, violent or unsettled weather
- Dropping frames
- Queen-less hives or those housing a failing queen
- Toxic chemical applications
- The aftermath of skunks severely depleting bee stocks
- Diseased colonies
- Too much perfume or deodorant
- Human breath
- Cigarette smoke: evidently hives don't have non-smoking sections
- You! When you haven't greeted them properly—smiling while snapping a 'selfie'

2. Bees aggressive behavior (with major stinging) may be caused by:

- Hives targeted by vehicles or pelted with foreign objects cast by bored or drunken joy-riders
- Cavorting cows knocking hives over in their quest for the perfect back scratcher
- Honey flow dwindling

- Two words: Bee Blower
- Severe robbing
- The colonies food stores hit critically low levels
- Improper manipulation of colony- bees don't enjoy their bee buddies being mashed
- Negligence; the smoker can become a blowtorch, singeing or incinerating honey bees
- Incidents which quickly evolve into out of control gang fights: you versus thousands
- Over reactive swimmers in pools
- Dogs or cats prancing through a bee yard - same applies to rambunctious children
- Anyone in range of Africanized colonies (there are many issues surrounding this condition: from simply walking near a colony, to the use of heavy construction equipment which causes earth vibration)
- Dark, heavy, fur-like clothes, felt hat – (say no more, squire)!
- Offensive odors produced by horses or other animals embedded in clothing or hands
- Bears, skunks, horses, cows, goats, unicorns and inquisitive, unrestrainable dogs

If you visit the bee yard in a rush, fresh from grooming a horse, clad in dark leather, or other heavy clothing, on a cloudy, windy day with no honey flow, the hive not being handled with care, a dog running and barking madly alongside his imaginary friends near the bee hives – W**hat do you think could happen?**

Conversely you're sporting light colored, appropriate clothing, there's sunshine, mild temperatures, no wind, little humidity, a honey flow is in full swing with tremendous flight, a buzz in the air, the dog and 12 kids safely sequestered in the van, away from the bees – (get the picture?) – **What do you think could happen?**

Highly territorial honey bees thrive in certain time frames and weather conditions, ducking and darting at will, always getting an early start on the day's activities; whether it's deep inside the colony, or foraging in a beautiful far off floral fantasy. Bees can and will react to outside influences; noises, smells, running animals or children, too much smoke, etc. Bee-aware of the weather, honey-flow, sunshine, temperature, etc. Respect their rules, understand and respect the hive – and honor their **Bee-Attitudes!**

Phill Remick is a former commercial beekeeper who teaches beekeeping classes, offers year round apiary troubleshooting, hive management and sells beekeeping supplies near Albuquerque, NM. Contact him at www.NewBeeRescue.com

Just the FAQs
Reader Responses

The Unfiltered Truth Perspectives…

Phill Remick's June article on the issues of pasteurized honey sparked some remarks from our readers. We have chosen to share two different perspectives with our reading audience, as they both bring to light important concepts to consider when comparing unpasteurized honey to raw milk.

Main considerations the editor hopes readers will take from these responses is that research is recommended for everyone so that they can make educated decisions based on the "facts" (from the scientific perspective) in addition to how it relates to their cultural beliefs and circumstances, which should all be considered when making a decision/judgement.

Thanks again for taking the time to write in; whichever side of the debate you are on, we hope that the exchange will help to further the considerations and inspire readers to learn more.

Respectfully,
Melanie Kirby, Editor

Our first response is from John Fetrow VMD, MBA; professor of Dairy Production Medicine at the College of Veterinary Medicine at the University of Minnesota. His opinions do not necessarily reflect those of the University of MN and are of his own wording.

As a happy (hobby) beekeeper, I watch a whole variety of claims go by about bees, honey, health, etc. Some seem self-evident (we need to protect pollinators), some seem well supported by science (excess or ill-timed treatments for Varroa will lead to resistance), some seem like harmless and self-serving assertions (eat honey and look beautiful...), and a very few seem likely to be either just plain wrong or worse, dangerous. The chaotic mix I think serves to keep us all open-minded and willing to shift our perspectives. I agree with you that the goal needs to be how to get people to respond to the conversations by taking their own look so they can make *"educated decisions based on the 'facts' (from the scientific perspective) in addition to how it relates to their cultural beliefs and circumstances.*" Thanks for all you do, John

Dear Kelly Bee Newsletter,
I just found the time to read the June newsletter and I think that a response to Phill Remick's article is warranted. The newsletter editors should perhaps be more thoughtful before labeling his opinions as "dandy." In doing so you might be supporting assertions that the facts cannot support and that might risk the health or lives of your readers. I will leave the merits of raw honey to someone with better knowledge than I, but I feel that his assertions regarding raw milk need to be refuted.

Raw milk is in fact dangerous. A summary by the Centers for Disease Control of milk related illness from 1993 to 2006 showed that (quoting from the summary; web site shown below):

"Raw milk was much more likely to cause outbreaks than pasteurized milk.

• During 1993–2006, 121 outbreaks reported to CDC were caused by dairy products where the investigators could determine if the dairy product was pasteurized or unpasteurized (raw). These outbreaks included 4,413 illnesses, 239 hospitalizations, and 3 deaths. {note: the "controversy" about how many died from non-pasteurized dairy products (is it 1? 2? 3?) is a distraction from the more than 4,000 illnesses and more than 200 hospitalizations. The fact remains that people can get very sick from consuming unpasteurized dairy products.}
• 73 outbreaks (46 from fluid milk and 27 from cheese) were caused by raw milk, and 48 outbreaks (10 from fluid milk and 38 from cheese) were caused by pasteurized milk.
• Probably no more than 1% of the milk consumed in the United States is raw, yet more outbreaks were caused by raw milk than by pasteurized milk.
• If you consider the number of outbreaks caused by raw milk in light of the very small amount of milk that is consumed raw, the risk of outbreaks caused by raw milk is at least 150 times greater than the risk of outbreaks caused by pasteurized milk."

Louis Pasteur was right 150 years ago. Milk has the potential to harbor a variety of bacteria that can cause serious or even fatal illness in humans. The fact that people can also get sick from contaminated pasteurized milk simply confirms that milk is a great culture medium. Pasteurization greatly reduces those risks. I work on dairies regularly and while I am likely exposed to and resistant to many of the common pathogens that might be found in milk, I would not drink raw milk. Your readers should be warned about raw milk, not mislead.

http://www.cdc.gov/foodsafety/rawmilk/nonpasteurized-outbreaks.html#nonpasteurized
13JUL2015

Our second response comes from Maya Keys of San Diego, CA

Dear Editor,
I know the initial discussion was about raw honey and not heating and hence destroying its healthy enzymes, but I see that the discussion has turned into a debate about the benefits or dangers of raw milk.

I would like to quote one of the most well-informed researchers of our day: Sally Fallon. M. Fallon has no ax to grind and does not benefit in any way from her in-depth research concerning raw milk - that started at the turn of the century when Weston Price observed that those that drank raw milk had straight, cavity-free teeth, and outstanding health.

From M. Fallon's book 'Nourishing Traditions' on p. 34 she says, *'The modern milking machine and stainless steel tank, along with efficient packaging and distribution, makes pasteurization totally unnecessary for the purpose of sanitation.'* Mr. Remick was correct in stating that the enzymes found in raw milk actually consume and destroy bacteria that enzyme-free (pasteurized) milk cannot.

To continue...p.34
'And pasteurization is no guarantee of cleanliness. All outbreaks of salmonella from contaminated milk in recent decades - and there have been many - have occurred in pasteurized milk. This includes a 1985 outbreak in Illinois that struck over 14,000 people causing at least one death.' It is obvious that the cleanliness of the facility, or the cleanliness of the 'bathtub' cheese that many people make can cause disease whether it is pasteurized milk, or raw. It is not the RAW milk that is dangerous, but the way that it is handled. It is not the pasteurized milk that is harmless, but it too is dangerous if not handled in clean conditions.

Pasteur was correct to identify germs and to bring to light the importance of washing hands and sanitary conditions. It was at the turn of the century that doctors were delivering babies without first having washed their hands. Thousands of babies and mothers died. During this time, conditions for cows became more like the factory farming conditions of today, which led to disease and contaminated milk. It was then that the boiling of milk ensued and rather than considering the conditions of the dairy, the finger was pointed at the milk.

What does boiling do to food? Hmmm. Boil a worm in biology class and it dies. Boil raw spinach and it loses it chlorophyll and stains the water green, boil meat and it becomes flavorless, boil tomatoes and they become mush. M. Fallon states on p. 35, 'Pasteurization reduces the availability of milk's mineral components, such as calcium, chloride, magnesium, phosphorus, potassium, sodium and sulphur, as well as many trace minerals.... pasteurized milk puts an unnecessary strain on the pancreas to produce digestive enzymes... may explain why milk consumption in civilized societies has been linked with diabetes.'

To continue...p.35
'...pasteurization destroys all the enzymes in milk - in fact, the test for successful pasteurization is the absence of enzymes. These enzymes help the body assimilate all bodybuilding factors, including calcium. That is why those who drink pasteurized milk may suffer from osteoporosis. After pasteurization, chemicals may be added to suppress odor and restore taste. Synthetic vitamin D, or D, is added - the former is toxic and has been linked to heart disease while the latter is difficult to absorb. The final indignity is homogenization, which has also been linked to heart disease.'

Before his death, Pasteur commented that boiling everything was not the right thing to do. Seems a pretty correct statement in light of the fact that our forefathers for CENTURIES survived on raw milk and cheeses, and France is well-known and even revered for its cornucopia of hundreds of raw milk cheeses.

Frankly, I think we are germ-phobic. Should we take those wonderful French cheeses and lovely French wine and boil them before consumption? All of those anti-bacterial soaps have been shown to not only kill the germs on your hands but the good gut bacteria in your intestines! Children who live are farms are far healthier than children who live in cities...due to the germs and bacteria that they develop resistance to.

I am enjoying a wonderful French Brie cheese as I write this.. It is made from raw cheese. It is also from a clean facility. Is it dangerous? I don't believe so, and neither do thousands of other cheese-aholics. We now 'pasteurize' almonds. Why? Because a picker/handler of almonds did not wash his hands after using the facilities and feces were on an almond that someone ate. Are almonds the culprit, or is the facility, the handling and MAN and HIS contamination of pure foods that is to blame?

Now, back to honey! What do we see on grocery store shelves? BOILED honey that has been filtered of EVERYTHING till it is crystal clear and contains nothing of value. Not only boiled, but watered down so that the supply of honey can go further, and hence garner more money for an inferior product.

Why do we have to fiddle with a perfect food whether it be honey, raw milk, cheese, eggs (yes, we 'add' omegas to grocery store, factory-farmed eggs), boiled orange juice, boiled yogurt (then 'add' probiotics because we killed the natural ones!), irradiated fruits and vegetables... and let's not even speak about GMO's! Sigh.

We are told to fear bacteria. Some bacteria, (like good gut bacteria) are our friends and keep us healthy. Some foods, like honey and raw milk have natural enzymes which help us to not only digest them, but help us to assimilate all their beneficial minerals and vitamins.

I applaud Mr. Remick for standing up for a perfect food. We do NOT (in my opinion) need to boil it/kill it to consume it. ALL of our forefathers feasted on perfect foods that were safe, healthy, flavorful... and went on to procreate US. It is only our generation that believes the scare tactics of corporations that benefit from the watering down, GMO's and factory farming of our foods.

Eat honey, eggs, raw milk, cheese, wine, beef, chickens, etc... that are brought to market from clean environments by people who care about their product. Eat 'bathtub' pasteurized cheese from a bathtub that has not been cleaned and handled with unwashed hands, and you get what you deserve. Just don't blame the (pasteurized) milk!

Respectfully,
Maya Keyes
San Diego, CA

X•Y•Zs

Advanced Beekeeping

by Dennis Brown

Hi Dennis,
We've been beekeepers for about five years now and are still confused about whether to introduce a mated queen, virgin queen, using a queen cell or letting the hive raise their own queen. Can you help us out with this dilemma? Thank you for your time.
Mathew and Pam Dawson

Hello Folks,
This subject can be quite confusing. The first thing you need to decide on is what you're trying to accomplish, how much time you have left in the season and what you would like the end result to be. I've made up a chart for you to review. When you see the options listed all at once, you will have a better understanding of the different choices.

The first in line offers the most immediate population growth. If the queen is laying a nice pattern, is populating the hive nicely, the offspring is gentle and the bees are hygienic, then this queen is everything you want to have out of a queen. So, unless you need to make a split, I would suggest that you keep things just like they are.

The second in line offers a re-queened hive the first brood to hatch in about twenty-six days. Typically, it takes the queen a few days to be released from the shipping cage and then to settle in.

The third in line shows that if you introduce a virgin queen in a queen-less hive, it will take about twenty-nine days before you see any adult bees hatching. This of course depends on weather conditions during the time the queen needs to go on her mating flight. There is a downside to using this method and that being you have no control over what drones the queen will be mating with. When you continue to use your already existing queen or order a new queen from a breeder, you're more likely to receive/have a queen from the type of stock you order. The breeder will have many hives surrounding their breeder hives. These hives are producing the kind of drones they want their virgin queens to mate with. These drones saturate the drone congregation area that the queen will be flying through making it more likely that she will be mating with the type of drone the breeder wants and you order. The final thought on this method is the time of year it is. Starting in July in the south (timing is different in other parts of the country) the queen slows down her drone laying activity. This means that there are fewer drones for the queen to mate with as time goes by. If the queen doesn't get properly mated, she will fail.

The fourth in line shows that if you're using a queen cell to re-queen a hive with, it will take

about thirty-two days to see any adult bees hatch out. The downside to this method is the amount of time involved and again the mating process explained above.

The last method mentioned on the list faces the same problems the fourth method faces.

Using the existing queen	brood in 21 days with no interruptions
Introducing a mated, laying queen	brood in about 26 days
Using a virgin queen	brood in about 29 days
Queen cells will produce brood	in about 32 days
A queen from brood	takes about 41 days

Summary:
The list is presented in the most favorable to the least favorable method to use depending on what you're trying to accomplish and what time of year it is.

Thanks for writing in and I hope that I've answered your question.

Enjoy your bees!
Dennis Brown

Dennis Brown is the author of "Beekeeping: A Personal Journey" and "Beekeeping: Questions and Answers." Contact Dennis at www.lonestarfarms.net.

Bee Health

The ABCs — Agriculture, Bees and Collaboration — Drive Optimism

by Barbara Glenn, PhD

Reprinted with permission from Amanda Culp | Director, Communications | National Association of State Departments of Agriculture | www.nasda.org | @NASDANews Originally posted on TheHill.com: July 20, 2015

As I speak to agricultural colleagues across the country, I can honestly say that it has been truly gratifying to observe how so many people with little direct connection to beekeeping are aware of the importance of pollinators to our food and our society. Along with this increased attention, more people are also aware that beekeepers are facing numerous challenges to keep our nation's hives healthy. The challenges they face are real and they're difficult, but if our collaborative efforts are directed toward meaningful action there is reason to be optimistic about our future.

One reason for optimism is the president's recent Pollinator Task Force report, which calls for a more comprehensive approach to restoring bee health. Most bee experts know there are many factors affecting bee colonies and logic dictates that multiple solutions will be needed. The President's plan looks at two factors that have seen too little attention — increased research investment to decrease colony losses and an expansion in forage acreage to increase a bee's dietary options. Both of these are legitimate targets of opportunity that can produce sustainable benefits.

Another reason for optimism comes from the growing collaboration among many diverse stakeholders to improve honey bee health. The president's report also supports development of voluntary State Managed Pollinator Protection Plans (MP3s). State departments of agriculture are leading the development plans through collaboration among pollinator stakeholders including farmers, beekeepers, crop production services, and others. MP3s show that collaboration at the local level provides real solutions which protect the health of our pollinators without one-size-fits-all federal regulatory requirements, while also advancing agriculture and conserving our precious natural resources. In another collaborative rally for improving honey bee health, I recently attended a 2-day workshop focusing on the "Healthy Hives 2020" initiative hosted at the Bayer CropScience Bee Care Center, with the goal of finding tangible solutions to colony health within the next 5 years. The participants included a diverse group of stakeholders, all of whom worked together toward finding the most impactful areas of research on improving the health of bees. While this process is in its early stages, there's no doubt in my mind that it can lead to meaningful research and ultimately, real solutions.

There is no silver bullet to improve pollinator health — despite calls by those who mistakenly point to pesticides as the sole threat to bee health. Nutrition, parasites and disease, genetic diversity, and the need for further collaboration between farmers and beekeepers all contribute to the health of these critical insects. There will be multiple solutions to address the complexities. We can all do better together, and MP3s are already a proven formula in a number of states.

The challenges facing bees are not new. What has changed is the increasing reliance on commercial beekeepers to help meet agriculture's rising demand for pollination services. Because of this, it is critical to balance bee health with food production. That is why it is so important that we continue to collaborate and work together to ensure that our efforts will be effective and sustainable for the generations to come. Have questions about pollinators in your state? Reach out to the chief collaborators in agriculture in your state: the state department of agriculture.

Barbara Glenn is CEO of the National Association of State Departments of Agriculture.

Bee Science

ABRC Proceedings, Part II

Abstracts from January 2015

American Bee Research Conference took place in Arizona this past January 2015. As part of an effort to introduce beekeepers to the science behind bee health, we have permission to reprint the abstracts for Kelley Beekeeping readership. Don't be afraid of the jargon—if a term is unfamiliar, you can always look it up. The abstract proceedings are divided into three parts. Part I was published in the July 2015 KB issue; and Part III will be published in the September KB issue.

11. Gibson, J.[a], Kocher, S.[b], Tsuruda, J.[c], Arechavaleta-Velasco, M.[d], Hunt, G.[a] – NUCLEAR-MITOCHONDRIAL INTERACTIONS AND GENE EXPRESSION IN HONEY BEE HYBRIDS; LINKS BETWEEN AGGRESSION AND METABOLISM

[a]Department of Entomology, Purdue University, West Lafayette, IN.
[b]Department of Organismic and Evolutionary Biology, Harvard University, Cambridge, MA.
[c]Cooperative Extension and Public Service & Agriculture, Clemson University, Clemson, SC.
[d]Instituto Nacional de Investigaciones Forestales, Agricolas y Pecuarias, Ajuchitlan, Querétaro, Mexico

12. Given, K. – HOW TO SELECT FOR BEES THAT BITE VARROA MITES AND GROOM THEM FROM THEIR BODIES

Purdue University, West Lafayette IN

13. Heintz, C. – PROJECT APIS M.: THE RESEARCH WE FUND AND WOULD LIKE TO FUND
Project Apis m., 6775 Chardonnay Rd., Paso Robles, CA 93446, Cell: 520-834-2832, Email: christi@projectapism.org.

Project Apis m. (PAm) is a non-profit organization governed by a Board of Directors made up of nine beekeepers from across the nation representing major national and state beekeeping organizations. A group of four Scientific Advisors reviews all research funding proposals and provides recommendations to the Board.

PAm's Mission is **to fund and direct research to enhance the health and vitality of honey bee colonies while improving crop production.** Our name comes from *Apis mellifera*, the scientific name for the European honey bee. PAm has become the go-to organization at the interface of honeybees and pollinated crops. We've infused over $3 million into bee research and programs since our inception in 2006 to provide growers with healthier bees resulting in better pollination and increased crop yields. We do world-class research with very low overhead.

We have brought new technologies to honey bee health research, discovered new pathogens,

developed comprehensive Best Management Practices, enhanced honey bee health by initiating *Seeds for Bees* to plant thousands of acres of honey bee forage and habitat, and supported Tech Transfer Teams to provide rapid feedback from the field on bee health. We are the recipients of numerous state and federal grants, as well as corporate grants that support honey bee research.

PAm is the largest non-governmental, non-profit bee research funding organization in the U.S. We are working hard to not only create a more sustainable honey bee supply and agricultural system, but also to improve domestic honey production. PAm conducted well-planned research strategy meetings to focus research on the most critical research needs in honey bee health. PAm has solid relationships with not only the nation's commercial beekeepers, but also with top bee scientists in the country. We sponsor PhD scholarships and graduate student research cultivating new bee scientists, and brought new technology to the honey bee world by providing bee labs with equipment to conduct honey bee research.

PAm currently funds: (see table)

Project Apis m. Funded Research - 2014

Principal Investigator	*Institution*	*Project*	*Amt Funded*
Rangel	Texas A&M	Stratiolaelaps scimutus	$5,000
Flenniken	MSU	Virology and Immunology	$43,500
Martin	UK/HA	Virus-Pathogen Complex	$32,556
Wick	BVS, Inc.	Virus and Essential Oils	$15,000
Eischen	USDA	Colony Density Almonds	$16,200
Johnson, R	OH State	Dimilin and IGRs	$134,640
Tarpy	NCSU	Nexcelom System	$29,480
Engelsma	GWSU	Hive Tracker Network	$22,140
Seccomb	Bee Alert	Infra-red Imaging for Grading	$62,000
Johnson, B.	UC Davis	IVDS Utility	$15,000
Flenniken	MSU	Diagnostic Tools for Lake Sanai Viruses	$15,750
Brutscher	MSU	Host-Pathogen Interaction	$50,000
Borba	UMN	Benefits of Propolis	$12,000
Wagoner	UNOG	Hyglenic Bees/Varroa Resistance	$15,000
		TOTAL FUNDS 2014	$468,266

Project Apis m.'s next RFP will be distributed soon and will target research for Varroa mite control (so that there will be no 30-year birthday party for Varroa in U.S. honey bees). Varroa remains a critical priority and PAm is seeking innovative approaches to control this pest and will go outside our normal RFP distribution channels to solicit proposals from livestock and animal science departments as well. Another top priority project for PAm is building diverse nutrition sources for honey bees in two critical areas where commercial bees travel – California and the Upper Midwest. In California, the project is called *'Seeds for Bees.'* We are building forage resources for the 1.7 million colonies that come to California for almond pollination by planting pre- and post- almond bloom flowering plants. This past fall we distributed $100,000 in seed, free to landowners in the almond growing region, to 150 participants and covering 3,000 acres in bee-attractive pollen and nectar sources. Additionally, we are initiating a project with Pheasants Forever to build honey bee habitat in the Midwest.

The Varroa project and the honey bee forage projects are Project Apis m's highest priority projects at this time.

14. Hooven, L.A.[a], Son, J.[b], Harper, S.[b] & Sagili, R.R.[a] – NANOPESTICIDES AND HONEY BEES
[a]Department of Horticulture, [b]Department of Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR

Honey bees have evolved specialized structures for gathering pollen grains. Much smaller particles of materials other than pollen may also be collected and stored within the colony, and honey bees are useful for sampling environmental contaminants. Pesticide active ingredients formulated into particles using nanotechnology have become ubiquitous in agriculture. Hydrophobic pesticides are shielded within various types of particles and polymeric shells, the surface chemistry of which can be manipulated to increase solubility, resist degradation, and adhere to the intended target.

Using electron microscopy, we are characterizing the size and shape of nanoengineered pesticide products (Figure 1), and their ability to adhere to bees (Figure 2). Of the pesticide products we have examined to date, scanning electron microscopy reveals sizes predominantly in the fine particle range (between 100 and 2,500 nanometers), as compared to pollen which generally ranges between 10,000-100,000 nm. We have found similar particles adhering to pollen grains collected in agricultural settings. We hypothesize that together with pollen, bees collect these nanotechnology-enabled pesticide particles, which may facilitate pesticide transport into the colony.

We are continuing to investigate whether nano-engineered pesticide formulations result in more or less accumulation of the pesticide within the colony, extended residual toxicity on foliage, or fugitive agricultural dust which may also adhere to bees. We are currently examining crop protection products which beekeepers, the literature, or our preliminary work suggest are of concern for bees. These include certain fungicides, which are applied when bees are in the act of pollination, and our data indicate exert delayed effects on larval development. We are also investigating encapsulated insecticides which have been reported to have extended residual toxicity to honey bees. Insect growth regulators, which may pose a particular risk to larval development if transported with pollen into the colony's

food stores, are also of interest. All of the pesticide active ingredients under investigation have been found in significant concentrations in pollen collected by bees while pollinating agricultural crops. Our work will provide new insights into pesticide exposure pathways for honey bee colonies, which may contribute to the protection of all pollinators.

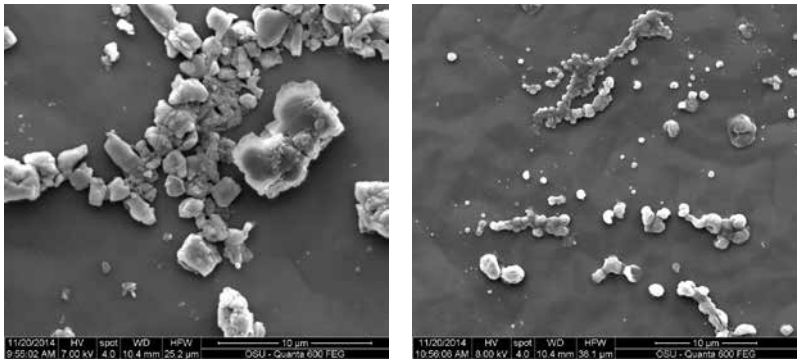


Figure 1. Examples of nanoengineered pesticide particles: Bravo (left) and Warrior II (right)

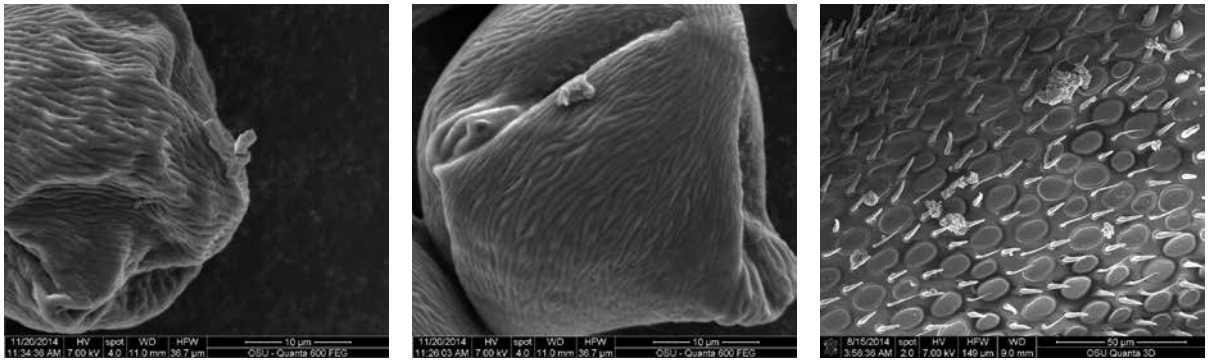


Figure 2. Possible synthetic particles found on almond pollen (left, center), and Beleaf particles transferred from leaf to bee antennae (right).

15. Huang, Z.Y. – EFFECT OF SIMULATED TRANSPORTATION ON CAGED HONEY BEES
Department of Entomology, Michigan State University, East Lansing, MI 48864.

Honey bees are routinely transported in the United States for pollination and honey production purposes. Almond crop alone in California demands more than 50% of (about 1.3 million) all the colonies in US to be moved there for pollination and then back to their original location. In a previous study we showed that the size of hypopharyngeal glands was the most reliable indicator for transportation induced stress – in all three trials transported bees showed smaller gland sizes than stationary bees (Ahn et al. 2012. Psyche, doi:10.1155/2012/193029).

Transportation related stress can be further broken down into three parts. First is the transportation itself: long distance of it (>2000 miles) causes stress by reducing the hypopharyngeal gland sizes,

although the mechanism remains unknown. A second stress is the relocation as a result of the transportation: foragers will lose their familiar patch of nectar and pollen resources. Yet a third one is the monofloral diet bees have to feed on during the pollination service at the first transported location.

My study here focuses on the first process: can we find a proxy for transportation in the laboratory? If so this would allow us not necessary to truck bees 2000 miles for a study and easier to determine the actual mechanisms of transportation-induced stress.

In the first experiment I used an Eppendorf Thermomixer R (300 rpm) and put caged bees on this shake or not (control) and both groups of bees were inside the same incubator (34^{0}C and 50% RH). The shaking continued 24 hrs per day for 30 days. Sugar was provided as a paste (powdered sugar + 50% syrup) and pollen was also provided the same way (bee collected pollen + 50% syrup). Sugar and pollen pastes were each provided inside 10x75 mm glass tubes. Bees were sampled for hypopharyngeal gland size and hemolymph protein on day 10 and juvenile hormone on day 18. We had 2 cages per colonies per treatment (shaken vs. not). We found a significant effect of shaking on honey bee juvenile hormone levels. Shaken bees showed a significantly higher levels of juvenile hormone compared to the un-shaken bees. Higher juvenile hormone levels can be a sign that the workers are ageing faster and more stressed. However, we did not find a significant difference in hypopharyngeal gland sizes between the shaken and unshaken bees.

In the second experiment, I used a Thomas Scientific HybriShake at the maximum setting for speed. In this experiment I tried to determine if there is an interaction between being shaken and nosema infection. In other words, I wanted to see if shaken bees would show a reduced resistance to Nosema ceranae infection such that shaken and nosema-infected bees would show a higher mortality and perhaps higher juvenile hormone levels. For example infected and shaken bees might show the highest levels because a previous study showed higher hormone levels in nosema-infected bees (Goblirsch, M., Z.Y. Huang, M. Spivak. 2013. PLoS ONE 8(3): e58165). I thus had 4 treatments with 2 status of being shaken or not and 2 status of being infected or not. However, in this experiment, neither shaking nor nosema affected the hormonal titers, and there was no interactions either between the two factors (i.e. status of infection does not differ between shaken or not, in terms of hormonal titers). I am yet to analyze gland sizes, survival and nosema spore levels in the sampled bees.

Thus the two experiments were not consistent but I am not sure if it was caused by the two different shakers or by other factors. I will continue to search for a condition that emulates bees under transportation. This research was supported by a grant from the Department of Entomology, Michigan State University and I thank Logan Russell and Nick Zielinsky for help in measuring gland sizes and counting nosema spores.

Beekeeping 'Round the Globe

BEE Silly, We Are!

by Jan H. Stringer

Have you ever had an idea that just wouldn't go away? The idea seemed silly because it involved giving away something and asking for something at the same time. That's what happened for me, Jan Stringer together with my husband, Alan Hickman when we had such an idea…. the giveaway part is our book called ***BEE-ing Attraction: What Love Has To Do With Business and Marketing*** and we are giving it away in a Kindle version August 1–5th and as you can see, it has a beautiful BEE on the cover.

The BEE is a symbol for our book because it is about becoming the kind of person you desire to BEE and how you want to be seen even though you haven't reached the goal yet. And the BEE represents that we can go beyond the barriers to fly like the BEE who was not aerodynamically designed to fly i.e. it has short wings, fat body.

Our silly idea involved combining our book with the Hashoo Foundation in their Plan BEE project which is all about doing just what we talk about in our book – building heart-centered businesses and Plan BEE which helps women learn to become Honey BEE Farm business owners. It's just seemed like a perfect match.

The moral of the story is... can you really BEE silly and make your dreams happen even when you have no idea if it will work... OF COURSE YOU CAN!

That's why we are GIVING AWAY the Kindle edition of our book ***BEE-ing Attraction: What Love Has To Do With Business and Marketing***

Two reasons we are doing this...
1. So you get inspired to read the book and use Strategic Attraction™ to explode your business success (this part benefits YOU)

2. So you will consider making a charitable donation to the "SACAT Plan BEE Project" Empowering Women with the Help of Honey Bees (this part benefits "the WORLD")

It was such an inspired idea that we joined hands with the Hashoo Foundation, and are helping to empower women to be independent by facilitating access to opportunities and the mentoring they need to operate successful honey bee farming businesses in places like Northern Pakistan and Houston, Texas. They are learning how to BEE in a business and these powerful women beat the odds to do it.

So BEE silly --- we are! **Download your KINDLE version August 1–5** for yourself and make a contribution to help us make a contribution in the world.

Jan H. Stringer and Alan Hickman, Authors, BEE-ing Attraction: What Love Has To Do With Business and Marketing, http://www.perfectcustomers.com/book/gift

Sweet As Honey

In homage to flavor and one that we savor…HONEY!

by www.HoneyBeeZen.com

Blueberry Salad with Honeyed Balsamic Vinegar Reduction

Honeyed Balsamic Vinegar Reduction Ingredients:

1 cup Balsamic vinegar

¼ cup honey

*The balsamic vinegar reduction keeps for a week. Excellent as a salad dressing or drizzled over fruit.

Directions:

Place balsamic vinegar in a small non-reactive saucepan. Bring to boil, then reduce to simmer. Cook until volume reduced by half, about 15 minutes. Add honey and continue to cook until mixture is a very thick syrup that easily coats the back of the spoon, the consistency of honey. If it gets too thick, you can thin by adding a bit of water.

Salad Ingredients:

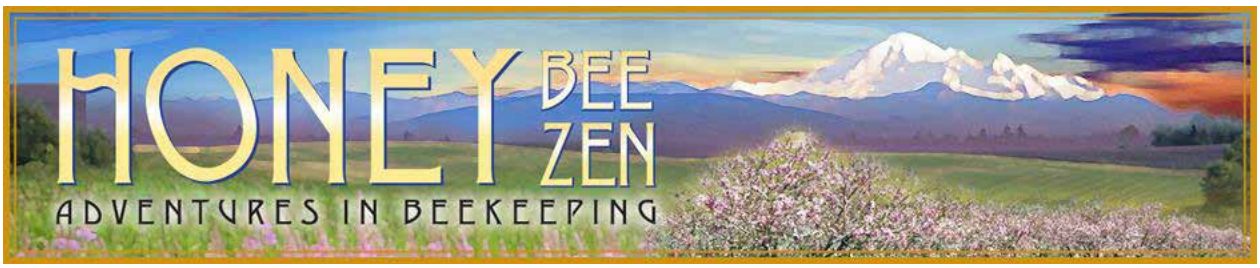
1 pound of mixed greens or romaine lettuce

½ cup crumbled feta cheese

½ cup silvered toasted almonds (optional)

2 cups blueberries

Combine greens with feta and almond slivers in large salad bowl. Sprinkle blueberries on top. Arrange salad on a plate. Drizzle balsamic reduction over salad. Serves 4.



7TH ANNUAL

NATIONAL HONEY BEE DAY

BAN IGNORANCE-NOT HONEY BEES

Hosted by the
North Central Florida
Beekeepers Association
www.floridabees.org

AUGUST 22, 2015

The North Central Florida Beekeeping Association

welcomes you to spend a fun and educational day where you will experience the wonderful world of honey bees and other pollinators.

Earlea Bee

Saturday, August 22nd, 2015
9:00am– 4:00pm

"Featured Speaker"

Dr. James "Jamie" D. Ellis, Jr.
Associate Professor of Entomology
University of Florida

Location:

Santa Fe High School
16213 NW US Hwy 441,
Alachua, FL 32615

Devyn Picard
Marion County Beekeepers Club

Candle Making with Shannan Sweeney

Building woodenware with Byron Teerlink

Open Hive Demonstration (weather permitting)

Children's Area with games and fun things to do

10 Frame Hive (with bees) Raffle
Vendors/ Door Prizes
50-50 Drawing

Food and Drinks Available

Photos with Earlea Bee

Our Guest Emcee will be 2015 American Honey Queen Gabrielle Hemesath of Clermont, IA

Topics will include:

Honey Bee Biology
Beekeeping Equipment
Getting Started in Beekeeping
Yearly Management
and more

For more information: (386) 462-2637, chappiesbees@windstream.net, www.floridabees.org

Planning Ahead for Your First Hives

Two sessions offered: September 13 and 20, 2015

Instructors:

Elina L. Niño and Bernardo Niño

Course Description:

We are very excited to be hosting our inaugural "Planning Ahead for Your First Hives" short course at the Harry H. Laidlaw Jr. Honey Bee Research Facility at UC Davis. The short course will include lectures and hands-on exercises. This course is perfect for those who have little or no beekeeping experience and would like to obtain more knowledge and practical skills to move on to the next step of owning and caring for their own honey bee colonies.

Lecture modules will cover:

- Honey bee biology
- Beekeeping equipment
- How to start your colony
- Maladies of the hive

Practical modules will cover:

- How to build a hive
- How to install a package
- Inspecting your hive
- Monitoring for mites

Participants will have the opportunity to learn about and **practice** many aspects of what is necessary to get the colony started and keep it healthy and thriving. At the end of the course participants will be knowledgeable about installing honey bee packages, monitoring their own colonies and possible challenges with maintaining a healthy colony.

Logistics:

The course size is limited to 24 participants per session. Please bring your bee suit/veil if you own one! The $95 registration fee covers the cost of course materials (including a hive tool), lunch and refreshments on the day of the short course. Participants are responsible for obtaining their own lodging. Short course will be held at the Harry H. Laidlaw Jr. Honey Bee Research Facility on UC Davis campus. For directions visit: http://elninobeelab.ucdavis.edu/map.html

For more information on registering for the short course contact Bernardo Niño: elninobeelab@gmail.com.

Our Planet in Balance: Bees, Fungi and Man

The Center for Honeybee Research welcomes you for a one day special event on September 26, 2015 in the Charles Beale Auditorium at the Haywood Community College in Clyde, North Carolina to examine ecological issues facing our Planet.

While our food supply is threatened by Pollinator decline, consequences of accelerating widespread chemical applications may not become evident in time to prevent adverse repercussions. Can we expect to engineer 'fixes' along the way, or is it possible to discover solutions in Nature? What affects honeybees affects us all.

The Center is proud to bring these five distinguished luminaries to Western North Carolina:

Paul Stamets joins us to talk about myco-remediation and his recent findings about bees. He is perhaps the most recognized mushroom guru on the planet and his use of fungi to decompose hazardous waste products is an example of Nature as partner in restoring balance. He has recently been working with mushroom extracts capable of reducing viral loads in honeybee colonies.

M**elanie Kirby** is the current Editor of the Kelley Beekeeping monthly online newsletter - which boasts over 40,000 subscribers. She is the co-founder of Zia Queenbees Farm & Field Institute in Truchas, NM (elev. 8300 ft.) in the southern Rocky Mountains and her passion is the search for resilient and adaptable honeybee genetics. She and partner, Mark Spitzig, collect and select stock resistant to both diseases and pests. She is keen to promote and participate in consilience based research (multi-disciplinary) and strives to help bridge the gap between the field and academia and vice versa.

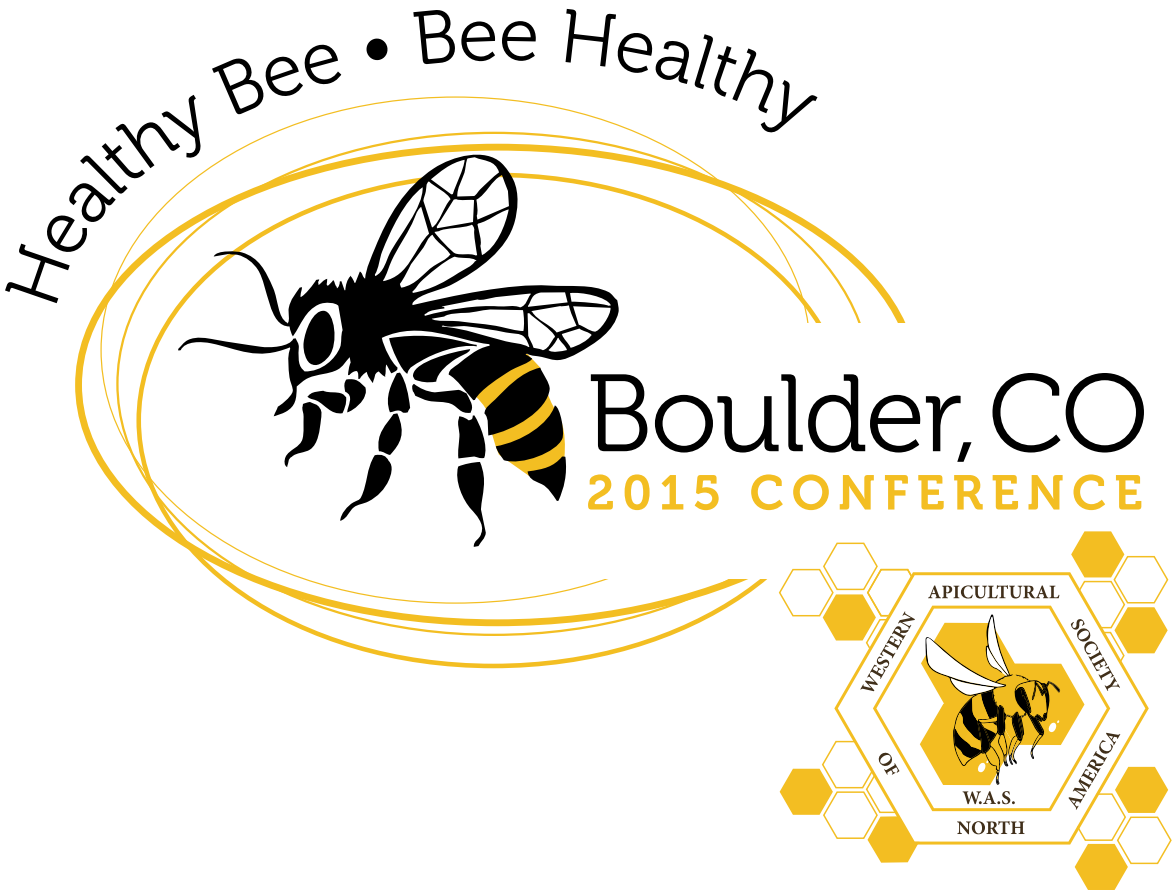
Dr. Don Huber is Emeritus Professor of Plant Pathology at Purdue University. He has been revealing alarming facts and trends about the World's most ubiquitous herbicide. Application of Glyphosate (aka Round-Up) has increased a thousand-fold since the year 2000 and is absorbed in every tissue of GMO food we eat. Is this 'harmless' formulation actually a wolf in sheep's clothing?

Dr. Jay Evans is one of the most prolific and respected experts in the field of genetics. He is currently Director of the USDA National Honeybee Laboratory in Beltsville, Md. and his interest is the expression of traits - how certain genes are 'turned on' or 'off' in response to environmental conditions. Beltsville is the primary lab testing viral load in honeybees.

Dr. Steve Sheppard is Professor and Department Chair of Entomology at Washington State University. He has been collecting and importing frozen bee semen to expand the genetic pool of our American honeybees for several years. In June 2015 Steve travels to Kazakhstan looking for material from a race of bees which may be ancestors to all our Western Honeybees. Dr. Sheppard and Sue Cobey assess and release this new material to bee breeders. Dr. Shepard has been collaborating with Paul Stamets in testing mushroom extracts in the elimination of honeybee viruses.

Date: Saturday September 26, 2015 Time: 9:00 AM - 5:00 PM
Place: Charles Beale Auditorium, Haywood Community College, Clyde NC
Cost: $55 per person (2 for $100) pre-registered, $75 at door if available
Email: carlchesick@honeybeeresearch.org Tel: (828) 779-7047

The Center for Honeybee Research is an IRS approved 501-C (3) charitable organization based in Asheville, NC, USA. This is an educational Event open to the general public. Ticket prices are applied to the costs of organizing, promoting, and producing this Event.



WESTERN APICULTURAL SOCIETY - Colorado
October 1-3, 2015: Putting the B in Boulder

A save-the-date notice for the 2015 Bee Healthy, Healthy Bee conference, put on by the Colorado State Beekeeping Association on behalf of the Western Apicultural Society

https://www.powtoon.com/show/dfCzy9P2iI7/save-the-date-were-puttin-the-bee-in-boulder/#/

The Colorado State Beekeepers Association is pleased to host the Western Apicultural Society of North America 2015 annual conference. The conference will be held in Bee-utiful Boulder on **October 1-3, 2015** at the Millennium Hotel. Colorado is stunning in the fall. The elk are bugling in Rocky Mountain National Park, the aspens are turning, the days are warm and the nights are crisp.

The conference theme is "Putting the Bee in Boulder" and we are indeed! The first two days will be "Healthy Bee" and will focus on topics supporting bee health. The final day is "Bee Healthy" and is focused on bees and human health/ interaction and will be a community celebration featuring the ABF's "Kids and Bees" program as well as Matt Camper from CSU performing a "bee beard" (or two)!

The chosen weekend has also been declared Homecoming weekend by CU and we are absolutely delighted to have secured our lodging early on. The secured room rate is $159 per night. PLEASE NOTE THAT ROOM PRICING IS VALID UNTIL AUGUST 31, 2015! Use code WAS2015 to make the reservation.

We have a full schedule of top-notch speakers. We also have something for everyone! If you are a beginner, we have education opportunities for you! If you are an intermediate/advanced beekeeper, then we have education opportunities for you! We have speakers scheduled for both lunch and dinner, too. These events will be "first come-first serve" but we have allowed time for people to patronize nearby establishments if they "snooze and lose".

On Sunday, we will be offering some additional tour options for WAS members. From Banjo Billy's Bus Tours of Boulder to Rocky Mountain National Park from the Butterfly Pavilion and the Denver Botanic Gardens to the Celestial Seasonings tea tour, there will be an optional activity for everyone!

WAS Conference Schedule Highlights

Wednesday, September 30

The conference will begin on Wednesday afternoon with a Board of Directors meeting followed by the "Bee Buzz Social" featuring the "Bees Needs" citizen science program and the Museum of Natural History on CU campus will open their expansive bee collection (over 900 species!) for us to check out. Honey craft cocktails and hors d'oeuvres will be served.

Thursday, October 1

The conference goes into full swing with Elina Lastro Nino of UC-Davis kicking off a full day of interesting speakers! She will be joined by Jim Doan and Mark Winston as well as our partners at the Honey Bee Health Coalition and the Pollinator Stewardship Council. We will break into beginner and intermediate tracks for the balance of the afternoon.

Friday, October 2

Susan Kegley of the Pesticide Research Institute, Peter Loring Borst of Cornell University and Jonathan Lundgren of USDA set to entertain and educate us. We will again break into beginner and intermediate tracks for the afternoon. The Banquet and Award ceremony will be held at the hotel this evening and will present a terrific opportunity for you to hobnob with the speakers.

Saturday, October 3

On Saturday, the focus of our conference will change from "Healthy Bee" to "Bee Healthy" and a community-wide celebration will begin! The morning sessions will feature several mainstream physicians who are using honey for general human health as well as for wound care. Dr. Marla Spivak, MacArthur Fellow and head of the University of Minnesota Bee Lab, will join us for lunch. The afternoon is packed with activities for young and old. The ABF Kids and Bees program will be available for the youngsters. There are FIVE different tracks available for conference attendees in the afternoon ranging from Apitherapy to Book Signings, Gardening for Pollinators to a "Who's the Fairest of Them All" session featuring some of the country's finest bee breeders (including KB editor Melanie Kirby). Don't forget the Bee Beards!!!!!

Phew! Ready for a break—too bad! The Farm-to-Table dinner will be seating in the early evening and will feature renowned southwest gardener, Lauren Springer Ogden, as the keynote speaker. Come hungry!!! And let Boulder's finest farms tantalize your palate. (And if you are the winner of the Homecoming game tickets between the Oregon Ducks and the CU Buffaloes, we'll miss you!)

Sunday, October 4

There is a tremendous amount to do in the Boulder/Denver area and today is the day to take advantage of some of the unique opportunities available here. You can take a Banjo Billy Bus Tour of Boulder. Head to Celestial Seasonings for a FREE tour and, while you are there, pop next door and check out the Leanin' Tree Museum and Sculpture Garden of Western Art (also FREE!). Rocky Mountain National Park is celebrating its 100 year anniversary this year and I would not hesitate to head up to enjoy the spectacular scenery, the elk bugling and the aspens in their golden glory. Whatever your taste, there is plenty to see and do in the area.

The CSBA is pleased and honored to host the 2015 WAS conference. We hope you will join us! Come for the conference, stay for the experience.

To Register: http://www.westernapiculturalsociety.org/category/2015-conference-news/

Center for Honeybee Research Presents
the 5th Annual International

DEADLINE OCTOBER 15, 2015

Don't Delay - Ship Your Entry Now

5th Annual International

2015 Black Jar Honey Tasting Contest

Honey. The concentrated essence of plants collected by thousands of individual bees. Each a blend of the unique flora within foraging distance. Different within each colony in a single place - indeed, different within cells of a single comb. Different throughout the progressing season and noticeably different year to year.

Think of the variety of plants within an area. Consider how they respond to sunlight and rain, temperature and humidity. Even within a small distance microcosms produce subtle changes. The mineral content of every square meter of the earth varies due to eons of weathering and seismic shift - differences reflected in honey.

Taste. A Sense all humans share. Wikipedia says an average of 3,000-10,000 taste receptors dot the human tongue - but they are marvelously imprecise in what they convey. We all more or less agree what is salty, bitter or sweet - but how can certain individuals reject a fruit as too bitter when others find them delicious?

Perhaps it is less about the chemical receptors on our tongues than it is how our brains interpret the sensations it receives? Ask people to rank what tastes best to them - and their answers will likely contradict the opinion of others sampling the same thing.

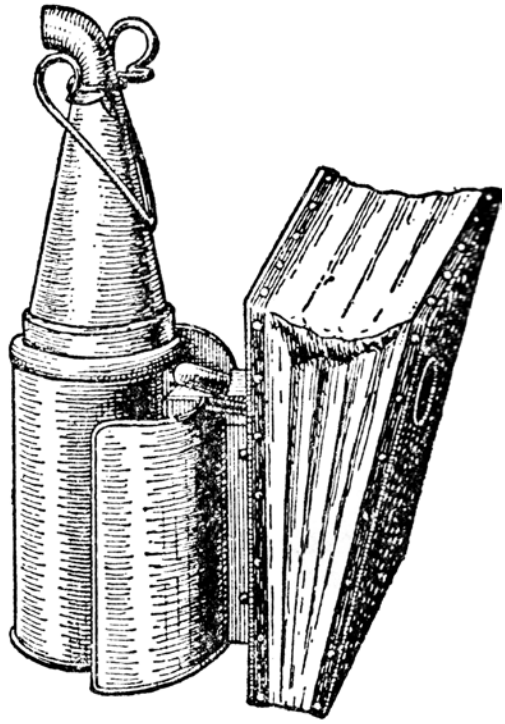
There exist in this World bees, people, and plants wonderfully exotic to each other. The goal of the **Black Jar Honey Tasting Contest** is to bring them together to share this intersection of Honey with Taste. The Center welcomes the prospect of 'discovering' varietals and blends from all parts of the Globe.

Entries must be received or post-marked by October 15, 2015. Due to difficulties and expense in shipping, International entries may be packaged in unbreakable containers (1 liter or 3 pounds US) which the Center will transfer into glass queenline bottles. Two beekeeper labels must be included for attaching.

For contest rules, visit: http://chbr.org/2015BlackJarHoneyContest/2015BlackJarRules.aspx

Grand Prize is $1500 U.S, blue ribbon, name added to trophy and Center website, and bragging rights for the whole world. We will also award $150 each to winners in ten categories - which will be determined based upon the qualities and quantity of entries received.

Due to the nature of tasting so many delicious flavors - it is necessary that numerous tastings be judged - with the winners moving on to 'regionals' 'semi-finals' etc. until we announce where and by whom the Best Tasting Honey in the World in 2015 was produced. Details of the Finals TBA.



Mead Making

Beginners Introduction to

EXPLORE THE RICH HISTORY OF THIS FASCINATING FERMENTED BEVERAGE FROM ITS ANCIENT ORIGINS TO ITS RECENT REBIRTH IN AMERICA. TASTE AND LEARN STYLES, INGREDIENT SELECTION, AND THE STEPS TO MAKING GOOD MEAD.

Friday & **Saturday**

November 13 - 14, 2015

Hosted by the Honey and Pollination Center at The Robert Mondavi Institute and the UC Davis Department of Viticulture and Enology

Register: **honey.ucdavis/edu/events**

UPCOMING EVENTS

August 2015

MI: 4th Annual Michigan Honey Festival
August 1, 2015; 9am-5pm
Harvey Kern Pavilion, Frankenmuth, MI
www.michiganhoneyfestival.com

NY: How Are my Bees? Understanding your Bees Midsummer Needs with Bill Day
August 1, 2015
www.pfeiffercenter.org/workshops_and_events/register.aspx

CT: Beekeeping Workshops - CT Beekeepers Assocation
August 15, 2015
Massaro Farm, 41 Forad Rd
Woodbridge, CT
www.eventbrite.com/e/beekeeping-2015-part-iv-fall-hive-prep-tickets-15518688816

California: L.A. Beekeeping Class 101
August 16, 2015
www.losangelescountybeekeepers.com/
www.losangelescountybeekeepers.com/beekeeping-classes-losangeles/

USA: National Honeybee Day August 18, 2015

Illinois: Beekeeping Courses at Long Lane Honey Bee Farms taught by certified master Beekeeper David Burns
August 22, 2015
14556 N 1020 E, Fairmount IL
Tel: 217-427-2678
www.honeybeesonline.com

New York: Long Island Beekeepers Club with Mike Johnston
August 23
www.longislandbeekeepers.org

Illinois: Beekeeping Courses at Long Lane Honey Bee Farms taught by certified master Beekeeper David Burns
August 29, 2015
14556 N 1020 E, Fairmount IL
Tel: 217-427-2678
www.honeybeesonline.com

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