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July 2018 LCBA Newsletter

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Questions? Suggestions? Resources you’d like to share, stories you’d like to tell? Please contact LCBA

Secretary Susanne Weil: secretary@lcba.community or call 360 880 8130.

UPCOMING EVENTS



Saturday, July 14: LCBA's 10th Annual Summer Potluck!

Come enjoy good food, good fellowship, & talk bees. Honey recipes always welcome!

When & Where: 3-7 p.m., Lintott Alexander Park, Shelter #1; 1101 Riverside Dr, Chehalis.

Facilities: We'll have 10 large picnic tables & benches (altogether, facility can accommodate 100), wood-burning stove, electrical outlets, outdoor faucet, garbage cans/liners.

Please bring: A dish to share, plate, cutlery – and family! LCBA will provide water, pop, napkins. Park management requests no alcohol at this event. *Looking for a honey recipe? Check out our "Recipes of the Month" column, bee-low.*

Drawing for 2019 Youth Scholarship Program: Bee gear, gift certificates, & fun items will be available for those who buy \$1 drawing tickets. If you'd like to help, please consider bringing an item to donate! So far, we've got a hand-crafted cedar deep and nuc box donated by Dan Maughan, 50 pounds of sugar from Reichert's Distributing, a Hop Guard package, and gift certificates from Reichert's Choice Meats, the Farm Store, the Tiki Tap [pizza] House, & more!



Above right, Lintott Alexander Park shelter; right, Phil Wilson won Dan Maughan's cedar nuc box at last year's potluck.

Saturday, July 21: LCBA Workshop Supers Removal / Varroa Control



Above, scenes from last year's Supers Removal/Varroa Control workshop: left, mentor Gottfried Fritz holds up a honey frame, discussing what frames are ok to harvest; right, mentor Dan Maughan demonstrates how to use a fume board to get bees to leave supers, one of a number of methods.

When: 10 a.m. to noon; Where: Please RSVP to secretary@lcba.community for location & directions – this workshop is NOT at our Club Apiary!

What: Are you getting ready to remove honey supers for the first time – or have you done this before, but would like to see alternative methods? LCBA mentors will demonstrate the fume board, bee escape board, & “brush & run” methods. We’ll share tips on honey storage, too. Also: once those honey supers are off, it's time to test & treat for mites: mentors will show how to use not just the slider board, but the sugar shake and alcohol methods. General bee Q&A & refreshments to follow. Please bring your protective gear - & questions!

Honey Spinning Workshops

This year, we are encouraging experienced beekeepers who need an extractor to spin honey to contact Phil Wilson, who is coordinating our “loaner extractor” and kit. **To contact Phil...** If you are a new or nearly-new beekeeper with honey to extract for the first time, and you’d like some guidance, great – please contact Susanne at secretary@lcba.community or 360 880 8130 and we will work out a day and time for you to use the larger club extractors at our apiary.



Thursday, August 9th - LCBA Monthly Meeting

**Speaker: LCBA Treasurer & Journeyman Beekeeper Rick Battin
WSU Bee Classes & New Diagnostic Lab – How They Can Help!**



Where: Centralia College, Washington Hall 103; 701 W. Walnut, Centralia, WA 98531

When: Social Time, 6-6:30 pm; Speaker, 6:30 – 7:30 pm; Business Meeting, 7:30-8:45

What: LCBA Treasurer and WASBA-certified Journeyman Beekeeper Rick Battin will share what he learned at WSU's Queen Rearing class and Bee Field Days, including news about the new diagnostic lab and its services for beekeepers. We'll have more details in our August Newsletter! Business meeting to follow with news about our upcoming exhibit at August's Southwest Washington Fair.



Tuesday - Sunday, August 14 - 19: Southwest Washington Fair

Honey Entries for the official Fair Honey Contest Must Be Submitted on Monday, August 13 at the Floral Building between 10 a.m. & 7 pm!

Once again, LCBA will have an extensive exhibit, including our observation hive. If you have items to loan, please bring them to the Floral Building on Monday, August 13 between 10 a.m. and 7 p.m., or contact Susanne (secretary@lcba.community). Bee sure to visit! If you would like to volunteer, please contact Susanne (continued next page – honey contests....)

Honey Contests: Monday, August 13, 10 a.m. to 7 p.m., is the window set by the Agriculture Division at the Fair for submitting honey and other bee-related entries. Please bring them to the Floral Building. Please remember that honey for the official Fair contest needs to be bottled in a Queenline Jar – we'll have these on hand to give members at our Summer Potluck & our August 9 meeting. Our "People's Choice" tasting contest will be Saturday, August 18 & Sunday, August 19; half-pints can be turned in on the 13th or later in the week. For more details on both contests, please see our website:

http://www.lewiscountybeekeepers.org/southwest_washington_fair .

Thursday, September 13: LCBA Monthly Meeting

Dan Maughan: Fall Management for Winter Bee Survival

When: Social Time 6 – 6:30 p.m.; Talk & Q&A, 6:30 to 7:30; Break & Business Meeting, 7:30 to 8:45

Where: Centralia College, Washington Hall 103, 701 W. Walnut, Centralia WA 98531

What: Dan Maughan will review the things we need to do for our bees at this time of year to help them survive the winter. We'll cover what to look for during fall inspections, hive manipulations, moisture control methods, Varroa monitoring and management, & more. Please bring your stories and questions!



Scenes from last year's fall management workshop: above left, mentor Cody Warren demonstrates his oxalic acid fogger for Varroa mite control; right, LCBA members work on making moisture control boxes for our apiary bee colonies.

Saturday, September 15: Fall Management Workshop

When: 11 a.m. to 1 p.m.

Where: Please RSVP to secretary@lcba.community for address & directions. It helps us plan to know how many are coming.

What: Are your bees well prepared for winter - how would you tell? LCBA Mentors will go through hives to assess their condition & demonstrate Varroa treatments (oxalic acid vaporizing, Api Life Var, & more), as well as winter moisture control methods, including how to build a moisture control box. After the workshop, those interested are welcome to help build moisture boxes for our club apiary colonies. Please bring your protective gear!

LCBA Events Coming Later in 2018 . . . Mark Your Calendars!

Thursday, October 11

Dr. Dewey Caron: Southwest WA Bee Losses & Management Practices

Color us excited, because LCBA was THE top responder to this year's Pacific Northwest Bee Loss Survey! This means that Dewey's data and insights will be even more relevant to us than usual. Thank you to all our beekeepers who responded to the PNW & BIP Surveys!

Thursday, November 9: Topic TBA – more details next month.

Saturday, December 8: LCBA's Holiday Potluck, Borst Kitchen #1: more details later, but we may have a mead-making demonstration!

LEWIS COUNTY EXTENSION UPCOMING EVENTS:



Coming Attractions!!!

WASHINGTON STATE UNIVERSITY
LEWIS COUNTY EXTENSION

<p style="text-align: center;">Repair What You Wear Series</p> <p style="text-align: center;">July 26, 2018; 10 A.M. - Noon</p> <p style="text-align: center;">Centralia Community Church of God 3320 Borst Avenue, Centralia</p> <p style="text-align: center;">Button Bonanza!</p> <p>Bring your button jar to upcycle them into jewelry or bring a T-Shirt to enhance!</p> 	<p style="text-align: center;">Growing & Caring for Hydrangeas</p> <p style="text-align: center;">July 28, 2017; 10 - 11 AM</p> <p style="text-align: center;">Providence Place Demonstration Garden 350 SE Washington Avenue, Chehalis</p>  <p>A beautiful addition to any flower garden. Learn the secrets of changing color, caring for and pruning this beautiful and easy to grow ornamental.</p>
<p>WSU Lewis County Extension</p> <p>If getting your hands dirty in the garden sounds like fun to you, and you love to swap plants or stories about plants and gardening, consider becoming a WSU Master Gardener volunteer.</p> <p>Master Gardener Volunteer Basic Training (Start any Month with Year Round Enrollment)</p> <p>Fee: \$200 for materials and costs associated with the training are due prior to beginning of training. Upon completion of training and 40 hours of volunteer service, trainees receive the title of "Certified WSU Master Gardener" and a \$50 refund.</p> <p>Contact Art Fuller by phone at (360) 740-1216 or by email at art.fuller@lewiscountywa.gov</p>	

Cooperating agencies: Washington State University, U.S. Department of Agriculture, and Lewis County. WSU Extension programs and employment are available to all without discrimination. Evidence of noncompliance may be reported to your local WSU Extension office.

Notes from LCBA's June 14 Monthly Meeting

Speaker: LCBA Vice President Bob Harris

“SUWEEEEET Honey FAQs”



Above left, Bob's honey won first prize in 2012, the 1st year honey was judged at the Fair for some time.
Middle, Bob spinning honey at LCBA's 2017 workshop; right, Bob wearing the Bee Hat Of Authority.

FYI: Secretary Susanne was out sick, so the notes are taken from Bob's slideshow.

President Kevin Reichert introduced the Rev. Bob Harris, LCBA's current vice president and founding president. Bob prepared a slideshow titled, “SUWEEEEET...Honey FAQs” to accompany his remarks on just about everyone's favorite honey bee product.

The Origins of Honey: Honey originates from nectar, which is approximately 80% water with a mix of complex and simple sugars, and some limited proteins. This nectar is secreted by a flower's glands, called FLORAL NECTARIES (not *nectarines!*). These glands are located in the flowers, usually deep at center bottom, occasionally on buds, stamen, and pistils.

Honey Bee Foraging: A Fortuitous Accident: Whilst the honey bee is foraging, two events occur; One is intentional; the other is a felicitous inconsistency. The main purpose of foraging is ingestion of the nectar from the flower, and the intentional gathering of pollen into its transport baskets (nectar, later fanned down into honey, serves as a carbohydrate source for bees; pollen provides protein to feed developing larvae).

Secondarily, pollen is attracted to the bee's body and sticks to her hairs by the static electrical charge caused by the process of flying. During foraging, these little Klingons move from flower to flower.

Generally, while foraging, bees will tend to stick with one plant species per trip, hence their effective pollination. This is called “floral constancy”: it is unintended by the bee, but very helpful for farmers.

Bob commented, “Not all flowers are equally appreciated by our little buddies. Bees have definite color and “taste” preferences, if given a choice. Generally, single florets are preferred over foo foo flowers (see illustration bee-low). Single flowers produce much more nectar and

pollen per flower than foo foo flowers, also they are less crowded, ergo, more efficient from a bees perspective. Where possible, avoid hybridized flowers/plants. They are genetically bred NOT to seed; thus they are minimal pollen producers. Also, your baby bees might have 3 elbows... REALLY. Caveat emptor!”



Above, left: honey bee approaching a relatively simple bloom ("[Honey bee on Camas flower](#)," by victorberthelsdorf; License: [CC BY-SA 4.0](#)). Right, bees generally will avoid very complex blooms, but this photo shows an African bee [*Apis m. scutellata*], whose foraging habits may vary ("[A Honey Bee takes nectar from a flower as pollen grains stick to its body in Tanzania](#)," by [Sajjad Fazel](#); license, [CC BY-SA 3.0](#))

Planting For Your Bees: Bob commented that if you are thoughtful about your planting consider three distinct phases of the growing season: Early - late Spring (Crocus, Borage, Calendula, Lilac); Early – late summer (Cosmos, Echinacea, Foxglove, Snapdragons); and Late summer – frost (Hollyhocks, Sedum, Zinnias, Goldenrod).” There are hundreds of excellent choices of tasty bee vittles: Coneflower, Yarrow, Sunflowers, Hyssop, Horsemint, Asters, Joe Pye, Bee balm, Black Eyed Susan, (and don’t overlook “weeds”), etc.

How Bees Process Honey: Now that the bees have visited all your tasty weeds and flowers... what happens next? Bees use their proboscis to sip nectar into their honey stomach, an organ just prior to their digestive stomach. The honey stomach is used only for gathering, storing, and transporting nectar. When full, the honey stomach weighs as much as the bee itself! Bees must forage 125 – 1000 individual flowers to fill the honey stomach.

Meanwhile, back at the ranch hive.... The returning bee regurgitates its load of nectar into the waiting mouth of a worker bee who will continue to regurgitate and re-eat the nectar for about 10-20 minutes before placing it into a cell. The enzymes from the hive worker are added to the enzymes from the forager, thus adding another genetic fingerprint to the nectar. It is actually the enzymes that begin the ripening process and moisture desiccation of your morning toast spread.

When the moisture content of the ripening cell approaches 17% (+/-) and a PH of around 4 (very acidic), it is sealed until consumed. An average 20 frame colony can consume 125 – 200 # of honey annually.

To RECAP: Nectar (sucrose) + bee vomit (Invertase / an enzyme) = Fructose/Glucose (Honey)
As Bob quipped, “Better Living Through Chemistry!”



Above, "[Crystallized honey, both in the jar and out of it. The inset show a close-up of the crystallized honey, magnified at 50x,](#)" by [Zaereth](#); [CC0 1.0 Universal Public Domain](#)

Why Does Honey Crystallize? Is it science, or magic? Because the water content of honey is so low, it is, chemically, a super saturated solution of the complex sugars contained. A solution is considered saturated when it can no longer receive any more dissolved solids. Over time, glucose will precipitate out of the solution, forming crystals. Bob assured the audience that crystals are still "tasty, nutritious, and safe; just crunchy." If you don't like to crunch, heat will generally solve the problem. You can place a well-sealed honey jar in a pot of hot water to return the consistency to liquid. However, do not heat the honey too much, lest you destroy the pollen particles and enzymes that make each honey unique.

How much time does it take for honey to crystallize – what does "over time" mean? 1 month, 1 year, 3,000 years? Bob notes, "it depends on several factors: the flowers, the climate and growing season, the genetics of the forager and the hive worker, and..... MAGIC!"

Raw Honey v. Pasteurized Honey: Pure, raw honey has no additives, and no pasteurization. Raw honey maintains its nutritional value, antibacterial properties, and digestibility. In contrast, pasteurizing honey destroys all of these desirable properties. Bob commented that "It's evil. Don't do it."

Washington Legal Requirements regarding sales, bottling, labeling by the producer: One does NOT require a food producers license for RAW honey. State law requires a label specifying the contents (Honey), the name and address of the producer, and the net weight. PROCESSED honey – meaning honey that has been spun, pasteurized, blended, or had added ingredients ("to include sneezing on it," Bob quipped) requires a WSDA food producers' license.

ORGANIC HONEY: Fact or Fiction? Fact: a honey producer can put just about anything on a label besides the required basics. Fact: Local honey can be found that clearly states, "Certified organic by the Washington State department of Agriculture" (except . . . the WSDA has NO published standards for organic honey). Likewise, bogus statements like "100% pure, ALL

NATURAL, US Grade A, or US Grade #1” mean absolutely nothing! This per the WSDA: Because..... there are NO standards, NO regulations, NO enforcementBecause..... it cannot be proven. Organic Honey isn’t impossible. It’s just beyond the ability of most beekeepers, who normally cannot control just what their bees may forage on. (Remember, bees can forage up to a four to five miles radius of their hive.)

Bob closed his talk by reminding listeners, “BEE sure to tell your sweetie that his/her kisses are sweeter than Bee Vomit.”

LCBA June Business Meeting

Treasurer’s Report: LCBA Treasurer Rick Battin was in Pullman for WSU’s Bee Field Days events, but sent his report via email. Rick wrote, “the savings account balance is \$5,001.15, the scholarship account balance is \$1,885.31, and the business checking account balance is \$5,779.16. The recent activity on the checking account is deposits for dues and name tags totaling \$330, and checks cashed for \$280.87 to Beeline for club apiary equipment totaling \$235.49, and \$45.38 for the honey spinning equipment for our loaner extractor kit. The only other transaction is our \$100 check we donated to the speakers about the AZ Hive from last month.”

Community Outreach: Community Outreach Coordinator Dan Maughan got an emergency call to move his bees out of a field near where pesticides were about to be sprayed, so in his absence, Kevin and Peter passed around a sign-up sheet for volunteers for LCBA’s exhibit at the Southwest Washington Fair this coming August 13-19. Thanks to those who signed up – we need more folks, so please contact Susanne (secretary@lcba.community) and/or sign up at our July 14 potluck! Speaking of which....

LCBA’s Summer Potluck, July 14, is coming: Kevin reminded members that our July meeting will be our traditional summer potluck at Alexander Park on Saturday, July 14. We hold our first fundraiser for the 2019 Youth Scholarship program at the potluck, so if you have items to donate, or know vendors to approach for donated items or gift certificates, please bring them on July 14. Dan and Susanne are also seeking volunteers to help organize the potluck, so please let him know if you are interested (ultramafic@netzero.net; secretary@lcba.community). We also need a few volunteers to help with set-up and clean-up.

Education: Education Coordinator Peter Glover reported that we have dates for our 2019 beginning beekeeping class: January 12, 19, 26, February 2, 9, 16. We will again offer the class through Centralia College’s Continuing Education program, which will process registrations starting in early December. We’ll again have Washington Hall 103 for all six Saturdays; the class will meet 9 a.m. to noon each of these days and be taught by volunteer board members. Our Youth Scholarship students are progressing with their bees: they will give updates on their progress at our July 14 potluck.

Mentorship & Club Apiary: Cody Warren, Mentorship Coordinator, reported that mentees and mentors have been working well together. If anyone needs a mentor, please contact Cody at codywarren68@gmail.com. The club apiary is buzzing with nine healthy colonies building up.

Free Tomatoes: Steve Howard again announced that he had tomato plants in the back of his rig to give away after the meeting! Thanks to Steve for his generosity in sharing ‘maters & more!

RECIPES OF THE MONTH from the National Honey Board

It's National Grilling Month, & NHB Has Great Recipe Ideas!

Peppered Asiago Bacon Burgers with Honeyed Arugula

Ingredients (serves 6)

- 2 lbs. ground chuck
- 1 cup asiago cheese, grated
- 2 tsp. salt, divided
- 2 tsp. freshly ground black pepper
- 1 Tb Worcestershire sauce
- 1/3 cup honey
- 2 Tbs lemon juice
- 6 cups arugula leaves
- 6 sesame seed buns, or brioche
- 1/4 cup mayonnaise
- 6 slices bacon, cooked, crisp
- 6 slices tomato



Directions:

Combine ground chuck, asiago cheese, 1 tsp. of the salt, pepper and Worcestershire sauce in a large bowl. Form into 6 patties. Grill on closed grill until cooked through (about 4-5 minutes per side).

In a medium bowl, whisk together honey, lemon juice and remaining salt. Add the arugula and toss to coat.

Toast the buns lightly on the grill.

Divide the mayonnaise between each of the six rolls, spreading on the bottom half of each. Place patties on buns, add one piece of bacon on top of each burger and top each with a slice of tomato. Evenly divide the honeyed arugula between each patty. Place bun tops on and serve.

<https://www.honey.com/recipe/peppered-asiago-bacon-burgers-with-honeyed-arugula>

Grilled Citrus Honey Lemonade – National Honey Board

Ingredients for one pitcher:

- 1 1/2 cups lemon juice,
approximately 8-10 lemons
- 1 1/2 cups orange blossom honey water
(to make this, blend 2 parts orange
blossom honey & 1 part hot water)
- 3 cups water
- Grilled lemon, lime, orange and grapefruit slices
- 1 1/2 cups gin (optional)



For Grilled Citrus Slices: Cut the poles off of each citrus fruit and slice into 1/4-inch slices. Grill on HIGH for 2 minutes on each side, leaving strong grill marks on the fruit. Set aside.

In a pitcher, add 2 grilled slices from each citrus. Add the lemon juice, orange blossom honey water and water. Top with ice. Stir well.

Serve into iced cups. Garnish each with grilled fruit (optional).

<https://www.honey.com/recipe/grilled-citrus-honey-lemonade>

Want to Learn More About Grilling with Honey?

Check out this National Honey Board Guest Blog from Chef David Guas:

NHB writes: A true culinary marvel, honey works in marinades as an emulsifier, but also brings balance and flavor, while locking in your grilled meat's natural juices and giving it beautiful color. Our friend, and grill master, Chef David Guas shared with us his best tips, tricks and reasons for grilling with honey, and you can check them out here:

<https://www.honey.com/blog/guest-post-from-chef-david-guas-honey-up-your-summer>

How Concerned Should Beekeepers Be About Drift Between Hives?

BeeInformed Partnership Blog by Dan Wyns, June 11, 2018:



Above left: an apiary utilizing color variation, landscape features, and colony orientation to minimize drift (photo: BIP); above right, a forager returning with a phoretic mite shows the potential for horizontal transmission via drift (photo: Dan Wyns)

“Bees have incredible navigation abilities that allow them to fly miles away from the colony to forage and return home with enough precision to locate the entrance to their colony, even when there are dozens of nearly identical hives within a small apiary site. The current understanding of navigation is that a combination of position relative to the sun and landmarks across the landscape get them close and then a combination of visual cues and pheromones to precisely locate the colony entrance. When a returning forager ends up returning to the wrong colony, she is typically not attacked as a robbing bee but accepted into the colony due to the pollen or nectar she carries. This process, known as drift, can lead to significant variations in colony strength over time and increase the potential for the spread of diseases and parasites within an apiary. Drift is generally not viewed as a huge problem, but there are some steps beekeepers can take to mitigate the amount of drift happening in their apiaries.

“When colonies are aggregated in large numbers and placed in rows of pallets, as is common in a commercial setting, there is potential for excessive drift. Many beekeepers elect to paint all of their woodware white, and this decision may be based on tradition, aesthetic, or other considerations. Others use a variety of colors, which creates a more vibrant apiary and may also help returning forages with orientation. While bees do not see the same spectrum of colors as humans, they are able to distinguish between different shades, assisting them in orientation. In general dark colors should be avoided, particularly in excessively warm and sunny locations, so colonies will not become excessively hot. However, a mix of pastel colors and tones can provide some variation to help bees distinguish individual colonies without adding the potential for thermal stress.

“In addition to variations in color, placement relative to other colonies and objects in the landscape can offer navigational aids that limit drift. Many beekeepers have observed that when a number of colonies are placed in a long line the colonies at the downwind end of the line accumulate more bees and yield greater honey harvests while those at the upwind end of the line are often short on bees and lighter in honey stores. By placing an array of hives in circles or arcs, with entrances pointed in different directions, the downwind drift effect can be lessened. Prominent landscape features can also be helpful in providing orientation assistance. In addition to potentially providing a windbreak, a structure, tree line, or hedgerow close to hives can reduce drift. Orientation landmarks can be particularly important when setting up yards for mating nucs. It is essential that queens return to the correct nuc after orientation and mating flights so extra consideration should be given to visual cues in order to minimize drift in mating yards.

“Drift is not something that most beekeepers give a lot of thought and it is certainly not among the most critical factors impacting colony health. Nevertheless, there is a growing understanding of the impacts of horizontal transmission of varroa mites between colonies and the ability to control varroa levels within and between apiaries. Phoretic varroa on drifting foragers are one way that ‘clean’ colonies may become reinfested. Given the ever-increasing number of challenges to bee management, reducing drift represents one area where beekeepers can potentially reduce colony stress for a minimal amount of effort.”

Original story: <https://beeinformed.org/2018/06/11/drift/>



Above: this beautiful photo of a honey bee foraging on an Indian Plum blossom was shared by LCBA member Marc Toenyan.

BEES IN THE NEWS

Thanks to Steve Norton, Phil Wilson, and the good folks at Bee Informed Partnership, Bee Culture, and American Bee Journal for stories.

Can mechanical drones pollinate almonds, cherries, & apples more effectively than honey bees? "Dropcopter Releases Pollination Results. Way More Fruit Using a Drone Than When Using Honey Bees": Bee Culture's Catch the Buzz, July 8, 2018:



Above, the old & the new: left, Florida commercial beekeeper Jim Doan inspects a hive (story follows the "Dropcopter"); right, "Dropcopter," a mechanical drone pollinator, may out-perform honey bees.

"Dropcopter, a drone AG startup based in California and Central New York, recently made headlines as the first company to successfully pollinate almonds, cherries and apples using drones.

"The company, a partnership between Matt Koball, Mike Winch and Adam Fine has been conducting studies on supplemental drone pollination since 2015. As of July 4th. The company has released results from its 2018 third party studies which report a massive increase in almonds and cherries as well as surprising developments for apples.

"Depending on environmental conditions which dictate the effectiveness of bees, the company has demonstrated an effective increase of 25% to 60% pollination set (cherries and almonds). It means that in cold weather, and during bee shortages there's a viable alternative to dependency on insect pollination.

"Their recently publicized Apple trials are a more complex but intriguing result. Apples are not grown in the same way that almonds are. If an apple orchard sets too much fruit, it requires the grower to hand thin the less desirable apples. That's a significant increase in labor cost. The reason for this is that the first and largest blooms to open on an apple tree produce the most

desirable and largest fruit. The smaller, secondary blooms produce smaller, less desirable fruit that are less valuable in the marketplace.

"What Dropcopter's controlled Apple trial has shown is that the artificial cross-pollination of these "King blooms" has increased the size (diameter) of the crop to be harvested. Bigger fruit equals better price.

"Using Dropcopter's methods a farmer can ensure that these "King blooms" are pollinated as soon as they open. A farmer can effectively "dial-in" the amount of pollination, maximizing their sizing to get the greatest return for their crop.

<http://dropcopter.com/> ; https://www.beeulture.com/catch-the-buzz-dropcopter-releases-pollination-results-way-more-fruit-using-a-drone-than-when-using-honey-bees/?utm_source=Catch+The+Buzz&utm_campaign=5e1bb7a139-Catch_The_Buzz_4_29_2015&utm_medium=email&utm_term=0_0272f190ab-5e1bb7a139-256261065

"Dropcopter" could make the lives of commercial beekeepers like Jim Doan – featured in the following article link - even more challenging: "Varroa Mites, Pesticides, Viruses, Pollination, Honey – a Beekeeper's Life," by Laura Reiley, reprinted from the *Tampa Bay Times* by *Bee Culture's* Catch the Buzz, July 2 2018. Here is the link:

https://www.beeulture.com/catch-the-buzz-varroa-mites-pesticides-viruses-pollination-honey-a-beekeepers-life/?utm_source=Catch+The+Buzz&utm_campaign=647684c8fb-Catch_The_Buzz_4_29_2015&utm_medium=email&utm_term=0_0272f190ab-647684c8fb-256261065

"Honey Bees Prioritize the Nutritional Status of Larvae When Selecting for a New Emergency Queen": *Bee Culture's* Catch the Buzz, July 5 2018:



Above, Dr. Ramesh Sagili, OSU, examines a larvae.

This interesting article raises questions . . . how do worker bees recognize a worker whose father was the same drone? Pheromones, scent? Either way, Dr. Ramesh Sagili's research at OSU gives

insight into the process of emergency queen replacement. Here is the link:

https://www.beeulture.com/catch-the-buzz-honey-bees-prioritize-the-nutritional-status-of-larvae-when-selecting-for-a-new-emergency-queen/?utm_source=Catch+The+Buzz&utm_campaign=2479cc7d78-Catch_The_Buzz_4_29_2015&utm_medium=email&utm_term=0_0272f190ab-2479cc7d78-256261065



"Africanized Honey Bees Have a Different Chemistry than Non-Africans": *American Bee Journal*, June 26, 2018: "Africanized honeybees, commonly known as "killer bees," are much more aggressive than their European counterparts. Now researchers have examined neuropeptide changes that take place in Africanized honeybees' brains during aggressive behavior. The researchers, who report their results in the *Journal of Proteome Research*, also showed they could turn gentle bees into angry ones by injecting them with certain peptides." To read the complete article, visit: https://www.beeulture.com/catch-the-buzz-africanized-honey-bees-have-a-different-chemistry-than-non-africans/?utm_source=Catch+The+Buzz&utm_campaign=abbd64c36d-Catch_The_Buzz_4_29_2015&utm_medium=email&utm_term=0_0272f190ab-abbd64c36d-256261065

"Scientists Find Evidence of 27 New Viruses in Bees": *American Bee Journal*, June 21, 2018: We've all heard of Deformed Wing Virus and most of you can probably list another 3 or 4 honey bee viruses. But what other viruses still lurk undiscovered? An international team of researchers uncovered evidence of 27 previously unknown viruses in bees. The finding could help scientists design strategies to prevent the spread of viral pathogens among these important pollinators. To read the full article, visit: <https://mailchi.mp/americanbeejournal/june-21-2018-scientists-find-evidence-of-27-new-viruses-in-bees?e=e9ff21e0bb>

That Varroa mites carry viruses debilitating to honey bees, we knew - but bacterial disease? Here's info on a new threat to our bees, & an opportunity to help researchers learn more: "Attention US Beekeepers: Researchers Need Mites to Sample. Check Out How, and Why": *Bee Culture's Catch the Buzz* for July 6, 2018:

"At the University of Wisconsin-Stout, we are investigating a potential new bacterial disease of honey bees which may be transmitted by Varroa destructor mites. Our studies led to the

discovery and reporting of the *Serratia marcescens* strain sicaria (Ss1), a new bacterial threat to hives. A link to the study published in PLOS-One follows:

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0167752>



Above, honey bee with phoretic Varroa mite (UW Stout)

"The UW-Stout INDES program is working to obtain fresh samples of Varroa destructor mites from across the US for analyses of Ss1. The goal of this study is to provide a clearer understanding of locations where Ss1 is appearing in the US to better understand its potential impact on bee health in this country. Samples of mites obtained will be examined for Ss1 without charge and confidential testing results will be provided to those submitting samples. Please consider participating in the study by providing a sample of mites from your hive or hives.

"If you are interested in providing a sample of Varroa mites for testing or have any questions about our work, we would appreciate an email from you to stacys5929@my.uwstout.edu. Specific collection and shipment instructions and responses to questions will be provided in our response to your communication.

"Thank you! - Jim Burritt and the INDES Testing Team"

https://www.beekeeping.com/catch-the-buzz-attention-us-beekeepers-researchers-need-mites-to-sample-check-out-how-and-why/?utm_source=Catch+The+Buzz&utm_campaign=c027baf596-Catch_The_Buzz_4_29_2015&utm_medium=email&utm_term=0_0272f190ab-c027baf596-256261065

"Neonics: From Bees to Birds": *American Bee Journal*, June 22, 2018:

Health impacts of neonicotinoids may go well beyond bees, according to a new University of Guelph study. Turns out that wild turkeys can end up with neonics in their livers, providing evidence that this common agrochemical is being ingested by free-ranging animals. To read the story, visit: <https://mailchi.mp/americanbeejournal/june-22-2018-neonics-from-bees-to-birds?e=e9ff21e0bb>

“Australian Scientists Taught Bees the Concept of Zero — Something Human Children Struggle With”: *Bee Culture*’s “Catch the Buzz,” June 27, 2018:



Above left, bees hover in flight (Bee Culture); right, “Schematic representation of how over a period of time bees learn to choose between combinations of numbers such that the lower number is correct, and then when presented with a problem of zero elements versus the higher numbers bees understand that zero is at the lower end of a numerical sequence,” from American Bee Journal.

“Zero, zilch, nothing, is a pretty hard concept to understand. Children generally can’t grasp it until kindergarten. And it’s a concept that may not be innate but rather learned through culture and education. Throughout human history, civilizations have had varying representations for it (the ancient Romans, for instance, had no numeral for zero, but the ancient Mayans did).

“Yet our closest animal relative, the chimpanzee, can understand it. And now researchers in Australia writing in the journal *Science* say the humble honey bee can be taught to understand that zero is less than one. The result is kind of astounding, considering how tiny bee brains are. Humans have around 100 billion neurons. The bee brain? Fewer than 1 million.

“The findings suggest that the ability to fathom zero may be more widespread than previously thought in the animal kingdom — something that evolved long ago and in more branches of life.

“It’s also possible that in deconstructing how the bees compute numbers, we could make better, more efficient computers one day. Our computers are electricity-guzzling machines. The bee, however, “is doing fairly high-level cognitive tasks with a tiny drop of nectar,” says Adrian Dyer, a Royal Melbourne Institute of Technology researcher and co-author on the study. “Their brains are probably processing information in a very clever [i.e., efficient] way.”

To read the rest of this article, visit: <https://www.beeeculture.com/catch-the-buzz-australian-scientists-taught-bees-the-concept-of-zero-something-human-children-struggle-with/#.WzQDVZP-Qys.facebook> . For American Bee Journal’s coverage, visit: <https://mailchi.mp/americanbeejournal/june-7-2018-honey-bees-can-zero-in-on-the-advanced-concept-of-zero?e=e9ff21e0bb>

“Asian Hornets: Electronic Radio Tag Technology Helps Researchers Find (and Destroy) Hornet Nests to Protect Honey Bees, the Hornets' Prey”: *American Bee Journal*, July 4 2018:



Asian Hornet – photo, American Bee Journal

"Asian hornets attack honey bee colonies in much of Europe. The United Kingdom doesn't want this hungry predator feasting on their hives. They've set up an effective eradication program, successfully destroying the unwanted invaders on two separate incursions.

“New technology will make finding the nests of these voracious hornets easier. Research shows that electronic radio tags can be used to track invasive Asian hornets and stop them colonizing the UK and killing honey bees.

“Scientists from the University of Exeter attached tiny tags to Asian hornets, then used a tracking device to follow them to their nests; the first time this has been achieved. They tested the technique in southern France and Jersey - where Asian hornets are well established - and the tags led researchers to five previously undiscovered nests....”

To read the rest of this Asian hornet story, visit: <https://mailchi.mp/americanbeejournal/july-4-2018-asian-hornets-lead-me-to-the-nest?e=e9ff21e0bb> .

"Fungicides Seem to be Much More of a Problem Than We Thought When it Comes to Honey Bees": Bee Culture's Catch the Buzz, June 13 2018:

“Highly variable winter weather and mites have hammered Ian Merwin’s honey bee hives for losses in recent years. And this Trumansburg, N.Y., grower counts on them to pollinate 150 apple varieties in three orchards at his Black Diamond Farm. But something more was happening. Working with Cornell Entomologist Christopher McArt, additional bee health challenges were discovered on this 64-acre farm in New York’s Southern Tier region.

“‘Beekeepers have been losing honey bees at an alarming rate,’ McArt says. “Our research indicates fungicides pose a much higher risk to bee health than previously realized, potentially

making the bees more susceptible to disease. Using fungicides in tandem with insecticide sprays can make the insecticides even more toxic to the bees.” To read the full story, visit:

http://www.bee-culture.com/catch-the-buzz-fungicides-seem-to-be-much-more-of-a-problem-than-we-thought-when-it-comes-to-honey-bees/?utm_source=Catch+The+Buzz&utm_campaign=78eed7c189-Catch_The_Buzz_4_29_2015&utm_medium=email&utm_term=0_0272f190ab-78eed7c189-256261065

"Clever Bees Can Identify Different Flowers by Patterns of Scent": *American Bee Journal*, June 14, 2018:



Above, a captive bumble bee walks across the surface of an artificial flower, working out the pattern of scent that has been made by placing peppermint oil in some of the holes. Credit: Dave Lawson, University of Bristol.

“Certain aromas trigger memories in humans, transporting us back in time. But how well do bees understand scent? And can they translate scent cues into a visual imprint? New research led by scientists from the University of Bristol and Queen Mary University of London demonstrates that bumble bees have keen sniffers, letting them tell flowers apart by patterns of scent.

“Flowers have lots of different patterns on their surfaces that help to guide bees and other pollinators towards the flower's nectar, speeding up pollination. These patterns include visual signals like lines pointing to the center of the flower, or color differences. Flowers are also known to have different patterns of scent across their surface, and so a visiting bee might find that the centre of the flower smells differently to the edge of the petals.

“Bumble bees can tell flowers apart simply by how scent is arranged on their surface according to new research published in the Proceedings of the Royal Society B. Lead author Dr. Dave Lawson, from the University of Bristol's School of Biological Sciences, said: "If you look at a

flower with a microscope, you can often see that the cells that produce the flower's scent are arranged in patterns.

"By creating artificial flowers that have identical scents arranged in different patterns, we are able to show that this patterning might be a signal to a bee. For a flower, it's not just smelling nice that's important, but also where you put the scent in the first place."

"The study also shows that once bees had learnt how a pattern of scent was arranged on a flower, they then preferred to visit unscented flowers that had a similar arrangement of visual spots on their surface.

"Dr. Lawson added: "This is the equivalent of a human putting her hand in a bag to feel the shape of a novel object which she can't see, and then picking out a picture of that object. Being able to mentally switch between different senses is something we take for granted, but it's exciting that a small animal like a bee is also able to do something this abstract."

To read the rest of the story, visit: <https://mailchi.mp/americanbeejournal/june-14-2018-clever-bees-can-identify-different-flowers-by-patterns-of-scent?e=e9ff21e0bb>

"Honey May Reduce Injury in Children Who Have Swallowed Button Batteries":
American Bee Journal, June 13, 2018:



"Ingestion of button batteries, which are frequently found in the household setting, can rapidly lead to caustic esophageal injury in infants and children. A new study published in *The Laryngoscope* found that drinking honey or Carafate® (a cherry- flavored duodenal ulcer prescription) may help reduce esophageal damage.

"In experiments conducted on cadavers and live animals, both honey and Carafate® provided a physical barrier and neutralized the tissue pH increase associated with battery ingestion; they both reduced injury severity compared with other common household liquids, including apple juice, orange juice, sodas, sports drinks, and maple syrup.

"An esophageal button battery can quickly cause significant injury. We have identified protective interventions for both the household and hospital setting that can reduce injury

severity," said co-principal investigator Dr. Kris Jatana, Associate Professor and Director of Pediatric Otolaryngology Quality Improvement at Nationwide Children's Hospital, in Columbus, OH. "Our results will change the practice guidelines for how medical professionals acutely manage button battery ingestion."

Full Citation: "pH-neutralizing esophageal irrigations as a novel mitigation strategy for button battery injury." Rachel R. Anfang, Kris R. Jatana, Rebecca L. Linn, Keith Rhoades, Jared Fry and Ian N. Jacobs. *The Laryngoscope*; Published Online: June 11, 2018. (DOI: 10.1002/lary.27312). <https://doi.org/10.1002/lary.27312>

ANNOUNCEMENTS

LCBA Loaner Extractor: For members experienced in extracting honey, but who do not own their own extracting gear, LCBA has a hand-crank extractor and is putting together an extracting kit to borrow. Phil Wilson has graciously agreed to coordinate this lending program. We will send an email to the membership list when the kit is ready for action.

Western Apicultural Society Newsletters: http://groups.ucanr.org/WAS/WAS_Journal. Click on the line in the paragraph on the right as directed. If you're still getting the old issue, click on "empty cache" in your browser or "refresh" or "reload" under VIEW in your menu bar.

WASBA Newsletter: Pick up your copy of this bimonthly online at www.wasba.org: click on "Newsletters." The July Newsletter's cover story is LCBA's Youth Scholarship Program!

That's all for now ~ take care, & bee happy!

~~ Susanne Weil, LCBA Secretary (Secretary@lcba.community; 360 880 8130)