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October-November 2019 LCBA Newsletter

In This Edition:

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

Thursday, November 14 - LCBA Monthly Meeting



Topic: DIY Beekeeping Projects:

- **Keeping Slovenian Hives in the PNW, Kay Crawford (above, left)**
- **Bear-Proofing Your Apiary, Terrie Phillips (above, middle)**
- **Making Your Own Screened Bottom Boards, Steve Howard (above, right, Cody Warren displays a bottom board Steve made & donated to the summer potluck)**

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

Where: Centralia College, Walton Science Center Room 121, 701 W. Walnut, Centralia 98531

What: Now that "active bee season" is behind us & bees are put to bed for the winter, beekeepers have time to think about new apiary projects for the year ahead. Members – see above - will share their cool fixes & ideas. If you'd like to share, please bring yours!

Business Meeting: Discussion – moving our meeting night? Many have noted that it's hard to hear in Walton Science Center 121. We can get back into Washington Hall 103 if we move our monthly meeting to Wednesday night. We'll discuss this and then vote at the December potluck.

Also at this meeting: 2020 Elections update; Youth Scholarship update; Apiary Update; Preparations for Holiday Potluck.

Above left, Steve Howard answering questions about his top bar hive after he & Kevin Reichert assembled one at a 2016 LCBA meeting; right, Youth Scholar Damon Andersen with his bees, filling out a frame of honey (photo, Jessica Andersen)

Friday, Nov 15: 2020 Youth in Beekeeping Scholarship Application Deadline

LCBA seeks young people who are interested in learning about honey bees. Eligible students who will be 6th to 10th graders in 2020 are invited to apply for our Youth in Beekeeping scholarship. Successful applicants get LCBA's beginner course free of charge, a mentor to help with their first year, and a loan of gear & bees: students who complete the service requirements keep gear & bees at year's end. For application forms and more information, visit LCBA's website (www.lewiscountybeekeepers.org) and click on Youth Scholarship Program.

Saturday, November 23 & Saturday, January 4

Getting Started in Beekeeping: A Free Orientation

When: 10 a.m. to noon

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

We'll Cover: Benefits of Beekeeping; "Bee Biology 101"; Equipment You'll Need; How To Set Up Your Apiary; Your First Year of Beekeeping—What You Do; Getting & Managing Bees; Harvesting Honey; Parasites & Diseases; Over-Wintering; & More!

No pre-registration necessary. This Orientation is also a preview of LCBA's Beginning Beekeeping Class, offered through Centralia College Continuing Education this January & February (see LCBA's Website, Upcoming Events).

Questions? Email secretary@lcba.community or call 360 880 8130.

Saturday, December 7: LCBA's 11th Annual Holiday Potluck

Where: Fort Borst Park, Kitchen #1, 2020 Borst Avenue, Centralia WA 98531. Kitchen #1 is on the left side of the road, just past the playground.

When: 3 to 7 p.m.: Schedule will bee as follows:

3 - 4 pm: Social Time

4 - 5 p.m.: Potluck Dinner: *What Should You Bring, Potluck-Wise? Please bring a dish of food to share, plus a plate, cutlery, & cup to eat/drink from. Please also bring a serving spoon for your dish. Borst Kitchen has tables & chairs, ranges, a refrigerator, & plug-ins for hot pots. LCBA will provide a ham, as well as coffee, tea, paper cups, & napkins.*

5 - 7 p.m.: Fundraiser for 2019 Youth Scholarship Program: *if you feel so moved, please bring a raffle item to support our Youth Scholarship Program! The drawing is fun and you may take home some fun bee-related items! Also - our 2019 Youth Scholar & mentor will share stories from their first year in beekeeping, followed by a brief business meeting. We will vote on moving our meeting night from 2nd Thursdays to 2nd Wednesdays.*


Above left, Italian Queen and her retinue (one of Susanne and Peter's queens); right, Alan Woods, Dan Maughan, and Cody Warren answering queen rearing questions at our October 10 meeting.

Notes from LCBA's October 10th Monthly Meeting

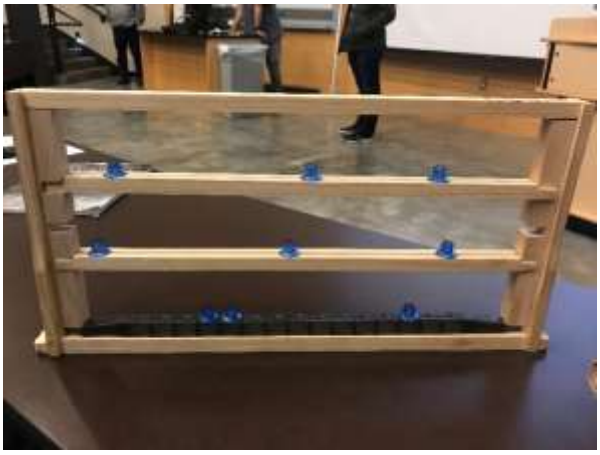
Topic: Queen Rearing Insights from Cody Warren, Adam Claridge, Dan Maughan, & Alan Woods

Vice President Bob Harris introduced Cody Warren, Adam Claridge (who arrived a little later), Alan Woods, and Dan Maughan. Cody and Adam took WSU Pullman's queen rearing course this past June. Alan owns Woods Bee Company in Centralia, where he sells gear and bees, including his locally raised queens, which many of us have bought. Dan, a journeyman beekeeper through our club, is now a commercial beekeeper, and many of us have bought queens from him as well.

We began with Cody, who noted that there is a course booklet called "Bee Breeding and Queen Rearing," by the Shepherd Honey Bee Lab. Cody recommends it for, among other things, techniques for caging and banking queens (that is, stacking many queens in a top box until you can sell them or make enough nucs to put them in).

How to graft eggs to create a new queen: Cody went to this course so that he could produce more queens at our club apiary. Around July 4, Cody noted, we had a queen go missing at the apiary; he was able to follow the techniques he learned in the course to develop new queens. First, he used the queen cups on the frame he got at WSU, and with that and a lit magnifying glass, he picked up the little eggs, barely visible, and put them into the cups, one to a cup. He emphasized that these eggs must be less than 3 days old, when the egg starts to fall over and hatch: look for a comma shape, not the fat "c" shape. The optimal time period is when the egg is between 26 and 48 hours old: after that it could be too late for the workers to infuse enough royal jelly to morph the developing worker egg into a baby queen bee. Rick noted that as soon as you can start to see the ribs on the larva, it is too late to graft. Also, the orientation of the cells is key: if you put them upside down, the larvae will drown in the royal jelly. This means that finding that ideal egg, while challenging in itself, is only half the battle: then you must situate them properly. When Cody had the queen frame set up, he put it into a queenless hive. 14 days later,

he came back, pulled out the special frame, and put the cells in an incubator hive, that is, a nuc that was queenless. This worked and we got a new queen for the hive.



Above, queen frames with cups.

Queen rearing gear: Cody described some of the equipment and techniques used in queen rearing. The "cloke board" is an inner cover with cloth material stapled to it so that heat comes up through hive. Cody said that he had a tough time grafting: he kept getting larvae too big, and so did others at his and Adam's table – it's tricky. Eyesight: grafting is a challenge for eyes no longer young. Cody takes a magnifying glass and puts it right over and then his glasses and he can see. Either that or he drafts his 13 year old granddaughter, who is a crack shot. But Cody found another way. . . .

Make a queen cell right in the hive by the "notching technique": At the class, one attendee showed Cody how to prep an egg to become a queen cell right in the hive. When a worker egg is at that comma stage, you take a hive tool and slice off the bottom of its cell. When you make that notch, the bees will make a queen cell if there is a larva there at the right stage. Cody says the notching is very easy. Dan Maughan pointed out that sometimes people do that notching by accident, when a hive tool slips, and next thing they know, there is a queen, so be careful.

Notching cells to make queens – the video: Cody showed a video on our Lewis County Beekeepers' YouTube channel, and you can watch it here: https://www.youtube.com/watch?v=4PXJKVDqLqk Cody has done this notching technique at our club apiary. He went in three days later after notching, having marked the spot with his green queen marking pen: each notch had a nice queen cell. He could see a fat larva inside each cell, so he put it back, waited two more weeks, pulled same frame, and the bees had started to rebuild the comb back into hexagonal shapes. The queen had emerged and been mated, and there wer already fresh larvae on every frame Cody pulled out!

What makes the notching technique work? Bob asked what about this technique encouraged queen-rearing. Cody said the bees are reacting to having the space; Rick noted that, also, they are

Above, queen cells filled out; right, a breeding nuc – photos from Mandie Wickert

being put into a queenless hive, so the notching technique encourages the bees to do what they would want to do in the circumstance: you are just giving them room and a short cut, whereas when they make an emergency queen cell on their own, they have to tear down the cell themselves. Rick has done this too: he found that if you score three or four notches on either side for 8 frames, then shake bees into nuc boxes with these frames, the queen cells grew.

Drones matter too: Cody noted that his own home apiary is about a mile and a quarter from Kevin Mills' Hive 5 Bees apiary, "as the bee flies." Cody sees their local drone convergence zone: every spring, you can see a huge figure 8 in the sky where the drones congregate, so Cody knows he will get well mated queens. You want really good drones, genetics from a really good queen, and you want a lot of bees in that box. The more bees, the faster they will draw cells out.

How do colonies accept these new queens? Dan noted that he worked with a California beekeeper who told him that they always take these new queens: if she hatches out of their hive, they think she is theirs.

Feeding the developing queens: Adam Claridge noted that one of the key things is to get nurse bees into the box because the nurse bees are the ones that can feed the queen. That is why you take the frames from brood chamber. An attendee asked how the nurse bees feed the developing queens in the incubator boxes. Alan Woods answered that one of the most important things in queen rearing is that the bees must be well fed. If they are not fed well, they can't produce high quality royal jelly. That royal jelly will determine the quality of your new queens. Also, Alan noted that you must put in some capped brood so that the nurse bees don't have too many open cells to care for.

What bees make the wax and food? The young bees. Alan commented that he can get a queen every week out of those young bees - and yet those same young bees are the ones we do not pay attention to . . . we look for eggs and brood and maybe the queen. But the young bees are very

important too. Dan added that he has seen what Alan is talking about when he looks at a hive where queen is failing….if the hive dies and you pop open the queen cell, there is no royal jelly, and that tells you there was no one to feed that baby queen.

An emerging worker is helped by a pair of nurse bees (photo, Rick Battin)

What size hive box is optimal for queen rearing? A member asked whether these techniques work when using medium frames; Alan answered that it takes a lot of bees to rear the queen, so deep frames really are your best bet.

What time of year is optimal for queen rearing? Dan noted, concerning requeening, that ideally, we would like to requeen our hives using our own larvae and create a situation where the hive can do that. Often we figure to do this in April or May. However, Dan pointed out that the queen can get hypothermia if she tries her mating flight when it is too cold, so our summer and early fall may be the optimal times. Just be aware, Dan noted, that you probably will not get honey from that requeened hive.

Queen quality - local is better: Alan noted that the queens raised here are better than those reared in California. He tends to ask a dealer how long the queen in the hive before mating, since the pheromones needed for mating only are active for a short window of days. Alan added: "If she's not laying, they're not staying." Adding to the point above that it takes a lot of bees to raise a queen, Alan said that he would never sell a queen who would not be able to fill two sides of a frame in a day. Alan notes that we can graft good strong queens from this area: we just have to be smart about it.

Beware importing bees with Africanized genetics: Mandie Wickert, who rears queens, noted that the price of queens is going up. Despite the price, she got a bad batch with closed cells: the cells had not been kept warm. Mandie warns that if you are going to buy cells, don't buy a pig in

a poke: go with someone reputable. She started beekeeping in California, Riverside and San Diego counties, and when the Africanized bees moved in, she moved out. Cody related how he got Kona queens that turned out to have Africanized genetics: they were great the first year, but the second year, he could not go near them. They got so hot had to move them out to the wilderness where no people are within 4 miles of the colony … but they are honey producing maniacs. It's important to ask questions – those bees came out of Texas.

Above, a Carniolan queen in one of Rick Battin's foundationless hives (photo, Rick)

Alan noted that they are a mix of many different genetics, but they turn in disposition like "Frankenbees: "they don't play well," Alan commented . . . kind of like Russian bees, which are great honey producers, but you have to be able to run fast. In contrast, when Erin O'Rourke from WSU checked Dan's apiary bees for mites, etc., Erin urged that they get the smoker going; Dan didn't want to because of fire danger. After a while, Erin observed that Dan's bees were the gentlest she had dealt with all year. At another bee yard they did have to get out the smoker.

Mark your queen and manage your bees! Alan noted that a lot of people don't even know their hive swarmed: this makes it important to mark your queen. If your hive is hot, check in a couple of weeks: they may have requeened and been confused when you got in them because they then were queenless. You have to manage your bees, keep notes, and stay aware of what is going on. Often, new beekeepers are anxious when they inspect and may avoid doing so because they don't want to risk killing the queen. But you have to inspect: if you don't, you won't know why they left, let alone be able to prevent their going. Dan noted that sometimes, bees swarm to solve a different problem than lacking sufficient space: there could be a disease in the hive, or maybe they don't like the location, or even the hive box itself. \

Laying workers and pheromone inserts: Another problem is laying workers: if you have one in a colony, you can put a virgin queen in there, and she will zero in on the odd pheromones the

laying worker secretes. Also, the unmated queen smells like a regular bee to the others, so the colony will not kill her. Alan also puts in Mann Lake's pheromone strips, but this must be done cautiously, because it can throw the colony into chaos: Dan has had them kill the queen when pheromone strips were put in, and Alan notes that for that reason, he only uses the pheromone strips when he is dealing with a virgin queen insertion. Rick noted that the queen's pheromones suppress the ovaries of the other workers. But Alan says that also, open cells suppress the workers' ovaries from starting up to make laying workers: if you have a hot queenless hive, he recommends that you put in a frame of brood, and the bees will start to feed the new larvae. The brood pheromone says get to work; when it is absent, bees will not bring back pollen.

Best origins for bee purchases? Dan noted that if you want to get bees in April, they will come from Texas, Florida, California, or Hawaii: more the latter two for us in the Pacific Northwest. Importing these bees does open the door to "hot" genetics. Alan said that he will kill a queen if the colony is too hot. Rick pointed out that at WSU's queen breeding program, they remove the aggressive queens. However, the more aggressive bees deal with the mites better, too: "they do not take guff from anyone," Rick commented. WSU's queens are spendy, but very high quality.

Dan noted that since the Honey Bee Act of 1922, the U.S. does not allow the importation of bees, not officially, but do you believe that works? Just as illegal drugs come in, it would not be impossible to bring in a queen in a car across the border with queen cage in your pocket in customs. Dan can attest that customs officials generally would not think to ask you if there happens to be a queen bee in your pocket.

Breed Local Queens! Alan asked, "Why aren't we making our own queens in this area?" He noted that the imported bees that are not being treated are bringing mites into our area. When you buy a package or nuc from California, where is it really from? The genetics could be from anywhere, considering how many hives go into California for almond and citrus pollination. Is it cheaper for the commercial beekeepers to take them home or sell them there? Next, our own neighbors will "share" these bees via swarms, (and, Alan noted, that's being a bad neighbor). The best answer, Alan urged, is to rear our own queens … maybe the club could have a class in this. We need to come up with ways to help our neighbors. Alan has a team of workers (human workers) to teach queen rearing. Alan would be interested in doing a workshop at the apiary, or at one of his yards.

Drifting and Robbing: Kay Crawford heard Randy Oliver speak up at the Northwest District Beekeepers' gathering earlier this fall: he spoke of a way of testing how bees drift. He found that the most drifting was from half a mile or further, from different hives. Dan commented that as Dewey Caron said, the ones that drift that far may be sick. Alan said that if you have Italian bees, Italians are lazy and will not travel far if they can rob. Part of the reason for this is that the Italian queen does not know when to stop laying, so the colonies get voracious. Alan gave us one closing recommendation: put a new frame between brood frames once a week: they will fill that up. It is a good way to build the hive.

LCBA October 10th Business Meeting Notes

Above, 2019 Youth Scholar Damon inspecting his bees.

Treasurer's Report: Rick reported that our checking balance is $8,030.89; savings, $5003.06; Youth Scholarship fund, $2,419.37. Rick is writing a check to cover the roof for the apiary shed.

Nominating Committee / LCBA Elections for 2020, Update: Secretary Susanne Weil reported for the nominating committee that so far, we have no contested offices. Bob Harris is willing to serve as President, Walt Wilson as Vice President, Cody Warren to continue as Mentorship Coordinator, and Pamela Daudet to continue as Community Outreach Coordinator. If neither Susanne nor Steve Howard, our other Nominating Committee member, hear new nominations by October 15, the slate is de facto elected. Susanne also noted that a bylaws revision would be desirable: the current language about the nominating process suggests that the slate of candidates presented to the membership should be only one candidate per office, which seems exclusionary and was not the intent of the bylaws as written. The phrase "at least" in front of "one" would clarify this. No one had issues with this slight change.

Community Outreach Update: We put out the call for Holiday Potluck volunteers to set up our December 7 event: Kay Crawford, Bob Harris, Steve and Cheryl Howard, and Susanne volunteered. Susanne asked that members who are interested in donating items bring them to the potluck. If anyone would like to approach a local vendor, Susanne can share the UBI and EIN numbers for their records; these are also on our website.

Youth Scholarship Program: Education Coordinator Peter Glover reminded members that applications for our 2020 youth scholarship are due November 15 – please spread the word! So far, we have two strong applicants. Cody reported that Damon is doing well with his bees, which are now winterized.

Apiary Update: The storage shed is now constructed. It is 16 by 14 feet with a 9 foot ceiling. Bob had a helper to erect it and Walt took photos.

August monthly meetings – a suggestion… As our August meetings tend to be sparsely attended – given summer vacations – we discussed having, instead of a formal meeting, a gathering/ workshop at the apiary with refreshments. This idea seemed popular.

LCBA 2020 Calendar: send your photos! Pamela and Susanne are working on a free downloadable calendar for LCBA members; please send us your bee photos!

Notes from LCBA's September 12th Monthly Meeting

Kevin Reichert & Cody Warren: Fall Management for Winter Bee Survival

Above left, Kevin Reichert with Ron Black at a 2017 LCBA fall management workshop; right, Cody Warren and 2018 youth scholar Caleb putting together a moisture control box.

At our September 12 meeting, Kevin and Cody reviewed key fall management techniques, like building a moisture control box, treating for mites, consolidating colonies, providing ventilation and rain covers, and more. Unfortunately, your scribe was working the computer for slideshows

and videos and was not able to take detailed notes. However, here are the URLs where you can find very helpful information for fall and winter management:

Making candy boards: here is the link to Cody's video of Kevin and Jeanne making candy boards: https://www.youtube.com/watch?v=fsw08r5B26o

LCBA's Fall Management web page on our site: https://www.lewiscountybeekeepers.org/education/fall_management_issues Here, you can find recipes for candy boards, winter patties, and no-boil sugar candy recipes. You can also find information on how to build a moisture control box, and more.

RECIPES OF THE MONTH from the National Honey Board

Herbed Turkey Breast

Ingredients for 6 servings:

1/2 cup - honey

1/4 cup - orange juice

2 T - butter or margarine, melted

1 1/2 tsp. - dried sage

1 tsp. - dried thyme

1 clove - garlic, minced

3/4 tsp. - salt

1/4 tsp. - pepper

1 - boneless, skinless turkey breast,

about 2 lbs.

Directions:

Preheat broiler. Position oven rack 6 inches from heat source.

Combine honey, orange juice, butter, sage, thyme, garlic, salt and pepper.

Place turkey breast on rack set in broiler pan. Brush with some of honey mixture.

Broil, brushing frequently with remaining mixture, turning turkey once, until no longer pink inside, about 40 minutes. Let stand 5 minutes before slicing.

Queen Bee Apple Pie

Ingredients for 8 servings:

6 cups - green apple, pared and sliced

2 T - lemon juice

1 1/4 cups - cold water

1/3 cup - cornstarch

1 tsp. - cinnamon

1/4 tsp. - ground nutmeg

1 cup - honey

1 pkg. (15 oz.) - 2 unroll & bake

9-inch pie crusts

1/4 cup - walnuts, coarsely chopped

1/3 cup - raisins

Directions:

Preheat oven to 350°F.

Toss together apples and lemon juice in large bowl; set aside.

In small saucepan, whisk together cold water, cornstarch, cinnamon, and nutmeg. Add honey; mix well.

Bring to a boil over medium heat, stirring constantly. Continue to cook and stir unti mixture thickens and becomes translucent.

Pour hot honey mixture over apple mixture; toss to coat evenly.

Turn apple mixture into pastry-lined 9-inch pie plate. Sprinkle walnuts and raisins over apples. Place second crust over filling. Seal and flute edges. Cut slits in top crust for steam to escape.

Bake 35 to 40 minutes or until golden brown.

Cool completely on wire rack.

Chunky Apple Cranberry Sauce

Ingredients for 4 cups' worth:

2 cups - fresh cranberries

2 - tart apples, peeled, if desired,

cut in 1/4-inch slices

1 cup - chopped onion

1/3 cup - olive oil

1/3 cup - honey

4 tsp. - red wine vinegar

1/4 tsp. - ground ginger

1/4 tsp. - ground cinnamon

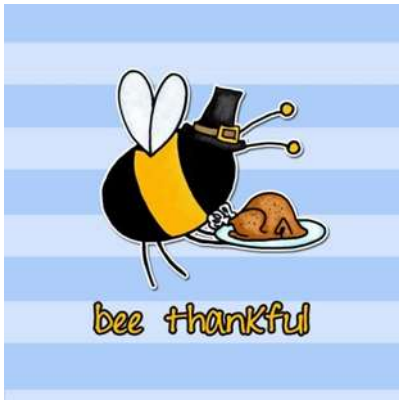
Freshly ground black pepper

Directions:

In a medium saucepan stir all ingredients. Heat to a boil.

Lower heat, cover and simmer 15 minutes; stirring occasionally.

Cool and refrigerate.



Have you ever wanted to document honey's benefits? This article has hyperlinks to National Institutes of Health archived research articles: Thanks to Phil Wilson for sharing!

"Does Honey Have Any Actual Health Benefits? We Asked an RD" - From *Real Simple*

"It's delicious, yes, but honey has more to offer than just sweet flavor for tea or on top of yogurt. According to nutrition expert Dana Angelo White, MS, RD, honey packs plenty of powerful nutritional perks.

"Natural Cough Suppressant: Honey has been used for centuries to help alleviate symptoms of the common cold, and now research confirms this approach for children ages one and older. "According to Angelo White, honey is an effective and natural alternative to over-the-counter cough medicine. A spoonful of honey can help relieve the irritation, though it's important to note that time is the most important healer of a sore throat.

"Key Ingredient for Sports Nutrition: Honey is a natural source of carbohydrates, providing 17 grams per tablespoon. This is ideal for fueling muscles, says Angelo White. Carbohydrates are the primary fuel the body uses, and honey can help maintain muscle glycogen. This is effectively stored energy for muscles, which gives athletes a boost in performance when they need it most. Honey can also be used as part of exercise recovery meals and snacks to replenish tired muscles and energy stores following a workout.

“Natural Sweetener: “Since honey is slightly sweeter than sugar, you can use less to achieve the same amount of sweetness,” Angelo White says. Try substituting half of the amount of sugar for honey in recipes. Additionally, there are so many distinctly delicious varieties of honey to choose—from alfalfa to wildflower—that add the perfect touch of flavor essence to foods.

“Antioxidants: High-quality honey contains a number of important antioxidants, including flavonoids, organic acids, and phenolic compounds. Buckwheat honey, in particular, has been shown to increase the antioxidant activity in your blood. Antioxidants have been linked to reduced risk of certain types of cancer, heart disease, and stroke.

“Antibiotic Properties: Because it’s a natural source of hydrogen peroxide, honey has been used as a natural antibiotic and skin protectant for centuries. Additionally, honey’s high sugar content helps ward off bacterial growth, and its low pH level works to pull moisture away from bacteria (which helps kill it). You can apply honey directly to a wound or infection to reap its antibacterial benefits. If possible, opt for raw manuka honey, as this type appears to be better at attacking infections that form a biofilm, or thin layer of bacteria.

“Bottom line: Honey is still high in sugar, but it has health benefits that make it a smarter sweetener to use when swapped in for white sugar and/or corn syrup.”

BEES IN THE NEWS

Thanks to Steve Arnold, Steve Norton, Gillian Davis, Randy Davis and Sherry Underwood, Phil Wilson, and the good folks at Bee Informed Partnership, Bee Culture, and American Bee Journal for stories.

Tacoma Candy Factory Will Give Away Free Sugar Syrup to Beekeepers this November: "This Almond Roca candy factory leftover will go to hungry bees," by Craig Sailor for the News Tribune, October 23, 2019:

"Brown & Haley employees Margaret Castro, left, and Peggy Bruce check for misshapen toffee logs prior to getting a coating of chocolate and almonds. The venerable Tacoma candy maker was offering tours of its new state-of-the-art Almond Roca production line on Tuesday, Oct. 22, 2019. Drew Perine DPERINE@THENEWSTRIBUNE.COM"

"It takes a lot of sugar to make the sweet Tacoma treat called Almond Roca — 4 million pounds a year, according to maker Brown & Haley. Now, honey bees can get in on the sweet tradition.

"On Tuesday, a crew cleaned out a 3-story-tall sugar silo at the Tacoma candy factory, producing 1,120 gallons of sticky sugar syrup. Brown & Haley produces 3 million Almond Rocas every day, said marketing director Kathi Rennaker. In preparation for the Christmas and Chinese New Year seasons, the Dome District factory operates 24 hours a day, seven days a week.. . .

"Sugar, trucked in from Idaho, is stored in two 3-story tall silos that stand outside the factory. Recently, managers realized one of them needed cleaning out. A crust of sugar had built up on the inside. Brown & Haley knew the process would create a lot of waste water, nothing more than food-grade sugar and water.

"When a Brown & Haley manager contacted the city to discuss disposing of the sugary water, an employee at the wastewater plant, who is also an amateur beekeeper, had another idea, said city spokeswoman Christina Lorella.

"'He said, wait a minute, this could be beneficial to the bees, instead of throwing it down the waste stream,'" Lorella said Tuesday.

"Fast forward a few weeks and — with the approval of the Pierce County Beekeepers Association — the city's first candy factory bee feed is underway. 'People from as far as Texas have expressed interest in the sugar water,' Lorella said. . . .

"The thousand gallons of sugar syrup will be dispensed to local beekeepers in containers they provide. First, the sugar water will be tested for sugar content and pH levels, Lorella said. 'We want to make sure that what we're distributing is safe,' she said.

"The syrup water should be available in mid-November, Lorella said. Beekeepers can pick up the water from 8 a.m. to 3 p.m., Monday-Friday at the Central Treatment Plant, Gate 6, 2301 Cleveland Way, Tacoma. Information: 253-502-2150."

To read more, visit:
https://www.thenewstribune.com/news/local/article236378183.html?fbclid=IwAR0f_7JOzWi26FKuSy2cXtyYAtwSX36BVKLiAXuUE9k259mAmGs6UeJenL0

"A Gene Fix for Nosema?" Bee Culture Magazine, September 27, 2019

Above VITA Bee Health has made Fumagillin available in the U.S. and Canada again.

"Agricultural Research Service (ARS) scientists have taken the first step towards a weapon against the major honey bee parasite Nosema ceranae.

Currently, there is no antibiotic treatment for this parasite' however, that will change this fall when fumagillin will once again be available in the US. This genetic approach, however, is a much better approach.

The scientists found that feeding honey bees a small amount of an interfering RNA compound (RNAi) could disrupt the reproduction of N. cerana by as much as 90 percent in the laboratory study, according to a study recently published in Insect Molecular Biology.

This RNAi compound targets a single N. ceranae gene called Dicer, explained Jay Evans, research leader of the ARS Bee Research Laboratory in Beltsville, Maryland, who headed the study.

"'Dicer is a critical part of Nosema ceranae's machinery for defeating honey bees' immune responses to infestation by these parasites. It also encodes an essential protein in N. ceranae's reproduction. So, it could be a double-barreled, practical route for attacking N. ceranae. Even better, RNAi against Dicer is specific to the parasite and will not interfere with the health of the honey bees,' Evans said.

"In earlier studies, the lab had looked at attacking N. ceranea genes that encodes for proteins that make N. ceranae a better parasite such as a polar tube protein that is important in the invasion of bee cells by the parasite.

"'But by striking at a single gene that affects N. ceranae reproduction and the ability of this parasite to counter honey bee immunity, I think we may have found an even better—an excellent avenue of attack,' Evans added.

"But this is just the first step toward a possible treatment. The researchers need to prove the concept in the field and beekeepers' apiaries.

"Nosema ceranae is widespread problem of honey bees, although the impacts on colony health remain unclear. The best measure of the damage of Nosema comes from Europe where this parasite has been linked to long-term colony declines in Spain."

"Deformed Wing Virus Genetic Diversity in U.S. Honey Bees Complicates Search For Remedies," by Kim Kaplan for the Agricultural Research Service, USDA, Oct 24, 2019; republished by Bee Culture

"Deformed Wing Virus (DWV), one of the leading causes of honey bee colony losses, is much more genetically diverse in the United States than previously thought, according to a study published by Agricultural Research Service (ARS) scientists in PLoS Biology. The diverse lineages of this virus are all equally bad for bees, and they make it more complicated to develop antiviral therapeutics, which could be the basis for developing a vaccine for the virus.

"The high level of genetic diversity was found among the virus population within individual honey bees as well as within bee colonies. About nine percent of the nucleotides in DWV's RNA have polymorphic variants (places in the genetic sequence with natural alternatives) that are present at numbers higher than half of one percent of the virus population. This corresponds to 100 million to 1 billion virus copies for any single divergent genetic position in an infected individual bee. . . .

Photo by Stefan de Konink, "Honey bee with Deformed Wing Virus and Varroa destructor on her torso" Wikimedia Commons, Public Domain, CC0 1.0 Universal

…"'Differences in the genetic sequence of virus highlight the importance of analyzing DWV in different locations in the United States and in other countries so we will be able to track how the virus evolves,' [lead scientist] Ryabov said. . . . [however,] [t]he discovery of these high levels of genetic diversity indicates the job of developing new treatments or a vaccine targeting DWV is going to be much harder than scientists previously thought. . . .

. . . "For now, the best thing that beekeepers can do to cut the amount of damage from DWV is to limit virus levels by treating for and reducing exposure to Varroa mites, which spread the virus," Ryabov said."

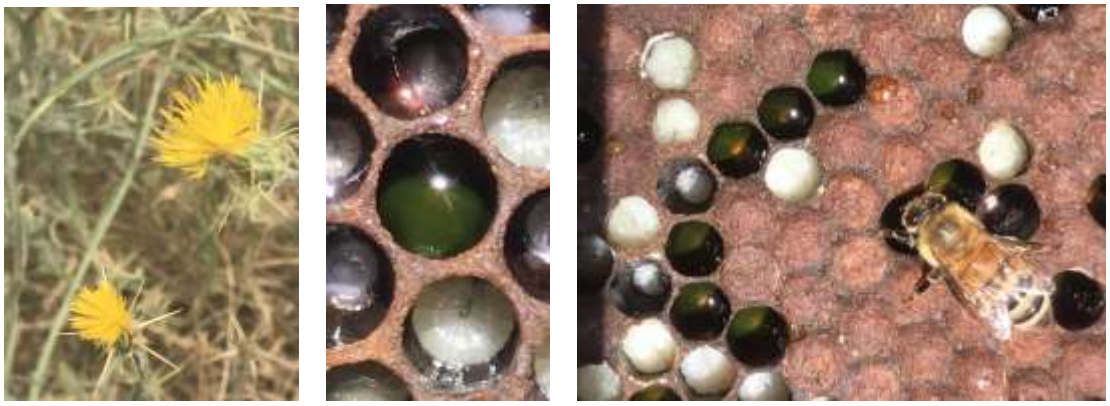
To read more, visit: https://mailchi.mp/dadant.com/abj-extra-october-24-2019-deformed-wing-virus-genetic-diversity-in-us-honey-bees-complicates-search-for-remedies?fbclid=IwAR0BC_y4lIqXs67OO_N-JT8owsVD1IbVp-YAAcZNk7gzZDdYZ6znXLUN0BM

"Yellow Star Thistle Produces Green Honey" Bee Informed Partnership Blog, Oct 25 2019.

"Yellow star thistle (Centaurea solstitialis) was extremely prolific in some areas of California this year. Many commercial beekeepers commented on it. One said that he hadn't seen this much star thistle in over 20 years. Personally, I saw huge fields of it all over the Sacramento Valley, from Redding down to Davis. Further south, I didn't see nearly as much as it is considered a noxious weed and invasive species, and the eradication programs may be working well in the southern regions.

"Yellow star thistle originates from the Mediterranean. The similar climate of the Central Valley makes it ideal for it to grow. According to the USDA, yellow star thistle has spread to 15

million acres in the western states. Yellow star thistle is bad news for grazing animals because it out competes native plants and can also be a physical barrier. Walking through a patch of star thistle will result in its skinny sharp thorns piercing right through a person's pants. It is unfortunate that yellow star thistle has some undesirable qualities. For their part, beekeepers love it because it produces a uniquely colored honey with a complex flavor profile and can sell for a premium. It can retail for up to $12 in half pint jars. Wholesale buckets have sold for $3 a pound and barrels for $2.85 a pound.



Photos above by Matthew Hoepfinger, BeeInformed Partnership: left, Yellow Star Thistle blooms; middle, Yellow Star Thistle nectar closeup; right, Yellow Star Thistle nectar in the brood nest

"Pure yellow star thistle honey is actually green. I have never seen it pure enough to be outright green, but I have seen it as a light amber honey with a definite greenish hue to it. I have seen pure yellow star thistle nectar in the comb and it looks dark green. That was likely due to the bees back filling the brood nest with it. The comb was dark, which made the nectar appear dark green. When I poked at it with my hive tool to taste it, it appeared much lighter but still very green."

"Ambitious Strategies To Combat Pests and Disease in Organic Agriculture," Bee Culture Magazine, October 18 2019: Could these be alternatives to pesticides?

"Fruit and vegetable growers who adopt organic agriculture practices forgo some of the commonly used tools conventional farmers use to fight pests and disease, but Iowa State University researchers are experimenting with new methods that could give organic growers new options. . . .

"'Organic growers run into a lot of pests and diseases that are difficult to manage with organic tools,' said Mark Gleason, an ISU professor of plant pathology and microbiology and member of the research team. 'Our goal is to identify some innovative ways of addressing these problems that also improve sustainability.'

"Much of the research will focus on cucumber beetles, squash bugs and other insect pests that target cucurbits and often carry bacteria that cause disease. Gleason said cucumber beetles and

squash bugs can devastate organic crops. Growers can use organic pesticides, but those that are available aren't as effective as conventional pesticides.

"Mesotunnels, like those pictured here, are composed of nylon mesh fabric suspended on hoops placed about 42 inches over the ground. The management technique prevents harmful insects from attacking crops. Photo courtesy of Mark Gleason."

"Gleason and his research team will study the effectiveness of mesotunnels, or physical barriers composed of nylon mesh fabric that is suspended on hoops placed about 42 inches over the ground, to prevent harmful insects from attacking the crops. Each mesotunnel will cover three rows, and each row in the experiments will extend for 200 feet.

"The mesotunnels are similar to a management tool known as low tunnels, which are physical barriers set up about 18 inches above the crops. Low tunnels, however, don't allow helpful insects to pollinate the plants, a necessary step in crop production, so the screens must be removed when the plants start to flower in order to allow for pollination.

"'Cucurbit crops need bees to pollinate them, so with low tunnels you have to take off the row covers to let the bees come in," Gleason said. "You can have protection for a few weeks, but then the plants get hammered when the cover is removed.'

"The new strategy – mesotunnels – can stay in place and protect crops for the whole growing season, he said. The mesotunnels in the experiments will be equipped with boxes of bumblebees to ensure pollination, Gleason said. The mesotunnels have performed well in Iowa on a smaller scale, and the new grant will allow the researchers to test the method on a scale approaching that of commercial growers.

"'The researchers also will test several weed-control strategies in conjunction with the mesotunnels,' Gleason said. Those methods include laying down crop debris and seeding "living mulch," or plant species such as clover and rye.

"The grant also calls for the researchers to evaluate potential biocontrol methods that could help organic farmers combat disease. These biocontrol methods would require producers to introduce

biological agents, such as bacteria and viruses, that suppress bacterial diseases in their crops. The researchers will look at bacteria and fungi that induce disease resistance in cucurbits, as well as viruses that attack the bacteria that cause disease.

"'It's ambitious, but it fits well in organic agriculture,' Gleason said. 'These biocontrol organisms are environmentally benign and may combine well with other disease-fighting tactics such as mesotunnels.'"

"High-Tech Pollination Program Begins Work In ND Sunflower Fields," by Jenny Schlecht, Forum News Service; reprinted in Bee Culture Magazine, September 24, 2019

"Bee Innovative believes it may have an answer [to honey bee losses] that could increase profitability for farmers and make better use of a dwindling resource — honeybees. . . .

. . . "Those concerns have led researchers to consider whether technology can play a part in pollination. For some researchers, that means looking into whether technology can replace bees. Harvard researchers have created RoboBees, insect-sized flying robots, and about a year ago, they found ways for the robots to fly untethered from power supplies. Numerous researchers are seeking ways to use tiny drones for means of artificial pollination. Walmart filed a patent for a system for "pollinating crops by unmanned vehicles."

"But in North Dakota — annually the No. 1 or No. 2 honey producing state in the country — researchers aren't trying to use technology to replace pollinators. They're trying to use technology to make honeybees more efficient. . . .

. . . "In August, the Lyalls brought their radar-like technology to North Dakota. Kate Lyall explains the device they created emits an energy signal that can see where bees are and where they're not. Using that data, they work with beekeepers to bring in more bees, strategically placed for where the field hasn't been pollinated. 'It's about providing the farmer with data that they currently don't have, she says.

"Bee Innovative started using the technology in Australian blueberry and raspberry fields. The blueberries saw increases in both yield and quality, as well as 80% less waste, and more of the blueberries were considered a premium, rather than standard, product, Kate Lyall says.

. . . "Bee Innovative will compare two nearly identical sunflower fields during the course of the study. To do so, they need to use larger drones and are relying on expertise from the University of North Dakota."

To read more, visit: https://www.beeculture.com/catch-the-buzz-can-plants-tell-time-and-robots-may-be-pollinators-sooner-than-you-think-in-north-dakota/?fbclid=IwAR1CHqeCzFI26IeaEV-Zjdixw0UC7uk3P2yhc9vD0mC4JgGb1BDRBKj0VZA

ANNOUNCEMENTS

Used Equipment for Sale, Good Condition: Extractor, electric uncapping knife, 2 bee suits, plastic bears with lids, and much more. Contact Sandy Dembinski, 360-262-3330, dembinskisandy@gmail.com

Beekeeping Employment Opportunity: LCBA member Joe Stout is seeking an experienced beekeeper to care for his bees this coming year. Joe would pay per pound of honey produced by year's end. He would provide all equipment and supplies, and his farm would assume all risks. This would be a contractor arrangement. If you are interested, please contact Joe at joe@mtcapra.com.

Would you like an alternate site for your bees? Here are two opportunities: Ann Girarde of Mossyrock writes, "I am a property owner of vacant land (10 acres) in Mossyrock and I am wondering if there might be any bee keepers who are looking for a place to put a hive?" You can contact Ann at (253) 225-8648. Also, Leah Van Horn, (360) 244-9205, would like to host 2 or 3 hives on a half acre, pesticide-free garden in Chehalis. In both cases, the homeowners are not beekeepers and would ask the bee owner to manage them.

Got Honey – but no extractor to spin it in? LCBA has a 4-frame manual extractor which members can borrow to spin their honey at their convenience! The "extractor loan kit" comes with an uncapping stand, bucket, hot knife, and uncapping fork. Those who'd like to participate can contact LCBA mentor Phil Wilson, who has graciously agreed to coordinate pickup/dropoff of the extractor for members. You can reach Phil by email at wilsopj@gmail.com or by phone at 360 785 3804. For details on our "Loaner Extractor SOP" – guidelines for use, please visit our website: http://lewiscountybeekeepers.org/education/lcbas_loaner_extractor_kit.

Honey Wanted in Bulk: Antony Richfield from Silver Cat Farms, who spoke to our club about mead-making in January 2018, is seeking honey in bulk – 5 gallons and up - and would like to be contacted by beekeepers willing to sell. He is not concerned with filtration or crystallization. If you have honey in the quantities Antony's after, please email him at silvercatfarm@gmail.com or call 425 344 8058.

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

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