

The Voice of Professional and Backyard Beekeeping

Cowlitz Beekeepers Association Newsletter

Dedicated to Preserving the Honey Bee through Community Action, Awareness and Education

March 2021

Issue 3

Next Meeting:

Where: Anywhere worldwide on your computer via Zoom

When: March 18, 2021 7:00 PM

Speaker: Dr. Dewey Caron

Topic: Early Spring Management: When is it time to divide?

If you live in Longview or the surrounding area and already keep bees, intend to do so or are simply interested in this fascinating hobby, Cowlitz Beekeepers Association is the association for you. Even if you don't keep bees, joining us will help support our cause, our community action and awareness and education programs.

Association Officers and Board:

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cowlitzbeekeepers@gmail.com

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Dr. Dewey M. Caron is Emeritus Professor of Entomology & Wildlife Ecology, Univ of Delaware, & Affiliate Professor, Dept Horticulture, Oregon State University. He spent 40+ years teaching, doing bee extension and bee research at Cornell (1967-70), University of MD, College Park (1970-1981) and University of DE, Newark DE (1981-2009).

Since retirement in 2009, he spends 4-6 months each year in Bolivia, where he keeps Africanized bees and teaches beekeeping. He keeps 5 backyard colonies in Tigard OR. He returns to the East coast several times each year to give Bee Short Courses and lectures to various bee clubs and state organizations. He remains active in Eastern Apicultural Society. His first EAS meeting was 1967 at University of MD. He has served as President (1986), Director (both from MD and DE), Chairman of the Board for 8 years, Chair of several Board committees and currently is Advisor for EAS Master Beekeeper program. He is the author of Honey Bee Biology and Beekeeping, Africanized honey bees in the Americas, and his latest book The Complete Bee Handbook: History, Recipes, Beekeeping Basics, and More.

2021 Nuc Purchase

This year we will again buy nucs from Foothills Honey Company in Colton, Oregon. These are 5 frame nucs. The cost is \$136 per nuc to club members only. Members were contacted by cell group leaders about their interest in purchasing nucs, but that was just a survey not an order.

There is more information about the nucs and ordering information at:

<https://cowlitzbeekeeping.wixsite.com/website/nuc-sale>

Fill out the form and send a check to the address shown at the bottom of the form. If you don't do checks then contact me and we can arrange a cash purchase. Nucs can be ordered now while **payment may be made any time before March 19.**



Our Zoom Meetings

Zoom video conferencing is celebrated for its ease of use, high quality video and audio, and collaboration facilities such as text chat and screen sharing. All you need is a computer or smartphone with speakers, a microphone, and a camera.

Attendees can join a Zoom meeting without signing into the app. Join us at our next meeting. Click the link I will send out before the next meeting.

2021 Membership

<https://cowlitzbeekeeping.wixsite.com/website/registration> click this link, fill out the form, submit. Then send your check to the listed address on the form. Cash payments can be arranged. Thank you for supporting Cowlitz Beekeepers Association. **March is cleanup the database month. If you have not been a member since 2019 you will no longer receive Association emails.** Newsletters will still be available at: [Newsletters](#)

Milestones in Membership

We love our Dedicated Members

Vernon Abell	5 years
Teresa Breeden	5 years
Susan Brookfield	5 years
Elmer Gaddis	40 years
Gerry Herren	20 years
David Kell	40 years
Randy Lassus	5 years
Dave McNeil	5 years
Jim & Lynn Ostrand	10 years
Roy Schaafsma	50 years
Norman Sturdevant	5 years
Dale & Maureen Trullinger	5 years

Queen Breeding – You Need This

Board member Ken Curtis would like to start selectively breeding queen bees to produce a strain of honeybees that are better adapted to our climate, as well as local pollen and nectar sources.

He would like to form a group of interested club members to work as a team to breed and mate queen bees. Breeding from queens with desirable traits (good hygiene, gentle, resistant to Varroa, good egg layers, etc.), could provide an opportunity to offer low cost or free queens to club members, as well as keepers in our area.

By implementing a queen rearing program we would be able to maintain a supply of queens for club members at a reasonable cost. Doing so would make requeening colonies more feasible. It would also help keep colonies healthy and eliminate unwanted traits.

Contact Ken at Kenctrts1957@yahoo.com 360-261-2795 or Bill.

Monthly Meeting via Zoom Notes

February 18, 2021

Meeting came to order at 7:00 p.m. with 32 In attendance.

Membership and renewal of membership (dues) is going well. To renew or become a member, go to the website and click on the link at the top that says Membership. Fill out the form and submit. Actual dues or membership fee is to be mailed to the address listed on the form.

Nuc sales are moving along. Money for nucs need to arrive no later than March 19, 2021. Nucs will arrive sometime in April. Actual date to be determined. To order 1 or more nucs go to the website and click on the link at the top that says Nuc Sale. Fill out the form and submit. Payment to be sent to the address listed on the form.

February 2020 was our last in person meeting because of COVID-19. We have been meeting by Zoom since March.

Dewey Caron will be our guest speaker for March. He will be speaking on 'Spring Management'.

Our speaker for February was John Holmes, our Vice President. He talked on 'Breeding a Better Honey Bee' with a question-and-answer time at the end.

Meeting adjourned at 8:44 p.m. Notes by Zenobia Scott, secretary

Single Brood Box Management

by John Holmes

Although it is common to use two 10-frame deep boxes for brood rearing with Langstroth hives, using a different management style requires only one brood box. The concern that a single brood box does not provide adequate space is not supported by the math. A deep frame contains roughly 3500 cells per side resulting in a 10-frame box having 70,000 cells. A queen laying 1,500 eggs per day times 21 days until the first emergence, results in 31,500 cells or 45% of the available cells. This still leaves 55% of the comb for both pollen and honey storage with some cells also being used in drone rearing.

This management is labor intensive. Since the colony can expand very quickly, the beekeeper must monitor, checking colonies weekly. Coming through winter in the single brood box the colony is checked for strength in early spring. By tipping the box and looking at the bottoms of the frames the beekeeper wants to see 8 to 10 frames covered with bees before adding a honey super (medium box) to the hive. This indicates a strong colony that is expanding and running low on space. Colonies with less than 8 frames of bees are closed, potentially fed, and given time to grow. The use of a queen excluder is mandatory with this management, placing it above the brood box before installing the super. This first super acts as an extension of the brood box with the added goal of reducing swarming behavior. The bees will move honey from the brood box into the super, opening cells for brood production. Spring honey will be stored in the super and used by the colony as it grows. As the nectar flow increases more supers are added as needed. At harvest when honey supers are removed for the season, feeding of the colony must start immediately. This supplies nutrition to the colony as it decreases in size, produces winter bees, and stores the winter food supply. If honey is harvested mid-summer it is important to leave the first honey super on the hive as a food source for an autumn that has unpredictable weather.



In making changes in colony management, it is always best to proceed slowly. Trying it with one or a small number of colonies allows the beekeeper to determine how it works with the current bee stock, the location of the apiary, and the beekeeper's energy and available time.

Advantages:

- no lifting of heavy top brood box to examine bottom brood box
- It is easier to locate the queen, examining 10 frames versus 20
- inspection of the hive takes less time
- 50% cost reduction in brood box equipment, less brood equipment to maintain
- Cost savings on some treatments for Varroa mites, treating one box versus two
- Quick status check of the colony by simply tipping the hive, checking for swarm cells

Disadvantages:

- Monitoring intensive, checking spring buildup to prevent swarming
- After honey harvest the colony needs to be fed
- Cost of queen excluders

Out in the Bee Yard

Bill Holmes

This month I have split my thoughts into 3 parts.

Genetics

At February's Zoom meeting, VP John gave us a primer on honey bee genetics. It was remarkably interesting and is available on our website. It starts 1 slide late which was the introduction. I realized how little I understand chromosome talk and decided to look a little deeper into it. As John noted, female honey bees are diploid and have 2 sets of 16 chromosomes giving them 32. Drones have but 1 set of 16 making them haploid. We, both male and female, have 2 sets of 23 chromosomes for a total of 46. We are completely diploid.



When a queen lays an egg, she provides that cell with just 1 set of 16 chromosomes. If she allows the egg to be fertilized, then the sperm from the drone adds the 2nd set. This would likely form a female bee. I said likely and I will get to that soon. Without the addition of sperm then the egg will be a drone with just 16 chromosomes. Since our queen has 2 sets of 16 chromosomes, nearly every egg will be different genetically. She has 65,536 possible combinations at her disposal, though she can't control that. With multiple drone mating's then that number can climb considerably higher. Your mother with her 46 chromosomes had about 8.8 million combinations possible. When you throw in your father's contribution you become a 1 in 70 trillion chance. Our sex determination is based on the 23rd chromosome. Your mother contributes an X and your father could contribute either an X or a Y. Two X's and you are female, XY and you're a male. Bees don't have a sex chromosome; they use a gene instead. Bees have about 15,000 genes which make up the chromosomes. We have a gene for eye color and there is a word for different instructions of the same gene and that's allele. Blue, brown, or green eyes are different alleles of the eye color gene. In bees, on the 3rd chromosome there is a sex indicator gene. Honey bees have at least 20 alleles of that gene, maybe as many as 50. Sex determination happens through a comparison of the allele from the queen and the allele contributed by the drone. If they are different, which 19 of 20 should be, then a female is created. If they are the same, then it's a male. Since an unfertilized egg only has 1 set of chromosomes, then there is never a difference at that gene and the egg becomes a traditional haploid drone. But in the case of a fertilized egg and that 1 in 20 chance where both alleles are the same then the egg becomes a diploid male with 2 sets of chromosomes. How about that. Since those drones are useless and functionally sterile, workers cull them out soon after hatching from the egg. But, that 5% culling of diploid males shows up in your brood pattern as holes. Lab researchers can raise diploid males and even breed them with queens to produce triploid females that have some drone characteristics.

One of the questions that came up at our meeting was about virgin queens mating with their brothers. If she only mated with brothers that would result in eggs that were 50% diploid males, which would be cannibalized, and 50% normal females which create a very ugly shot brood pattern. That is why the drones stay close to home and she ventures further away for her mating flights. If she mated with 12 drones and 1 of those was her brother, then we would get about 9% diploid males and more of a shot brood pattern. Drone congregation areas where mating takes place likely have 10,000 drones from many colonies so the chances of encountering her brother are not high. Honey bees in Europe and Africa have higher genetic diversity and may have up to double the sex alleles of our American bees.

Oxalic Acid

After listening to Randy Oliver at our December meeting I thought I would like to make the Swedish sponge saturated with Oxalic acid. The method he used is an extended release of OA rather than the one time shot we give when using Vaporization (sublimation) or dribble. It involves soaking Swedish sponges in glycerin and oxalic acid, and then placing it into a hive for about 2 months. His results with this process in California last summer were, honestly, amazing and a

possible game changer for our war with mites. You can watch a recording of his presentation from our website or you can go to scientificbeekeeping.com and read more.

I purchased from Amazon a package of Swedish cellulose sponges containing 6 sponges for \$9.95. There are many suppliers and I had to assume they were all about the same. I also purchased 1 liter of vegetable glycerin for \$11.95. I had enough OA crystals on hand. I was only going to make enough solution for 1 full sponge so I weighed about 2 fluid ounces of glycerin and then poured it into a stainless steel pan. Next I weighed out an equal amount of OA and added that into the pan. When working with OA you should always wear gloves and since splashing is possible, eye protection should be worn. I began warming the mixture while stirring with a wooden stick. I monitored the temperature with an infrared thermometer so I would not exceed 160 degrees. The OA was fully dissolved at 140 degrees. I put 1 strip in the pan and allowed it to soak for about 4 minutes then lifted it out with tongs and draped it over a chop stick to drip dry for 5 minutes. Then I weighed the sponge and found it contained 30 grams of OA. Randy tested at 50 grams and 25 grams of OA and had similar results with both. So I am happy with this methodology. I went ahead and did the second half sponge and put them in a tupperware container. Randy told me they may begin breaking down by 2 months.



I would like to place a fresh 30-gram strip between 2 deeps towards the end of April when I should still have low mite counts. If you would like more information you can contact me. Cost of this treatment would be less than \$1.25. This is not the year-round solution to mites as more research is needed and thankfully ongoing, but if I could get away with a winter OA vapor treatment, a spring sponge insertion, then a later summer Formic Pro or Apiguard treatment and not have mite problems, I would be happy.

The Yard

My method for getting the stuff I need into the apiary to do inspections has always been to use hands, arms and pockets. I invariably need something I didn't bring. So, I saw this thing, available at Home Depot called a Husky 22 inch Connect Caddy for \$15. I can put quite a bit of stuff in it and keep it a little organized with the 5 compartments. I haven't had a chance to use it yet, but I did light the smoker and then put it on the plastic bottom. Bad news, I use horse bedding pellets for fuel and the bottom of my smoker gets to 175 degrees, which started melting the plastic. I could test burlap but since I like how long the pellets burn without going out, I won't stop using them. I think the caddy will still be handy as long as I keep a hot smoker away from it.



In the shop (my garage when vehicles are in the driveway) I completed two small projects. First, I built a trap out box which is a single deep which you can connect via a hose to an unreachable hive. It may be in a tree cavity, masonry wall, or similar. It works by allowing workers to leave their hive then transit my deep before exiting. Upon returning from the field they enter the box but can't find the path to their old hive. The box is loaded with 4 frames of drawn foundation, so they unload their nectar or pollen and go back to foraging. After a few days when the box has accumulated nearly all the field force, I would add a frame of eggs and larvae from one of my hives which would attract nurse bees. The queen sensing foreign larvae would then come out to investigate. When that happens, my work is complete. Should take less than a week. My next project was just to make 4 nuc boxes. I already had 4 but this would give me more flexibility in making splits or stacking nucs 2 high which I could overwinter with 10 frames, or even use as a swarm trap. Lastly, I checked hive weights on the 24th and everybody is still in good shape. Make sure moisture is not impacting the colony. You can sometimes tell by checking that the cover is dry and not heavy. But I encourage a top entrance along with an insulated top. Bill

I copied this from the Federal Register, and it says we can now use OA with supers. Bill

Oxalic Acid; Exemption From the Requirement of a Tolerance

A Rule by the Environmental Protection Agency on 02/23/2021

Based on the lack of toxicity and the fact that residues will be below and indistinguishable from naturally occurring oxalic acid, EPA concludes that there is a reasonable certainty that no harm to the general U.S. population or any population subgroup, including infants and children, will result from aggregate exposure when considering dietary exposure and all other non-occupational sources of pesticide exposure. Accordingly, EPA finds that exempting residues of oxalic acid from the requirement of a tolerance will be safe.

BEEKEEPERS CALENDAR OF SEASONAL ACTIVITIES

March

Suggested Activities for Beekeepers in the Coastal range from Washington, Oregon and California...

Brood rearing will begin in earnest and be quite noticeable by month's end. - The bees will begin flying this month and although there is usually adequate spring pollen sources, nectar is in short supply. Honey bees can consume up to 3 pounds of food per day, so feed as needed. Keep the hive entrances clear. Brush away any dead bees to ensure adequate ventilation and egress.



On a calm and warm (at least 55 degrees) day when the bees are actively flying, open the hive to check the status of the colony. - Check that the hive is queen right - are there eggs in the brood chamber? Do you need to combine weak colonies? - Keep in mind, with cooler temperatures and limited or no nectar, the bees might be more aggressive. Keep your visit short.



If sugar feeding has begun, continue. Otherwise check hive weight/honey stores often and feed if necessary. Remember cold windy March weather can keep bees from getting out and starvation can hit quickly. Spring Sugar Syrup is a 1:1 ratio.

Handmade Proud:

Looking to buy new woodenware at reasonable prices?

- Bottom Boards
- Top Covers
- Inner Covers
- Hive Boxes and more...

Contact **Gerry Herren**

Ph. (360) 355-0051
Swarmchaser40@gmail.com

APIARY REGISTRATION

All beekeepers, backyard or for a business, need to register their hives each year. All money collected helps fund research projects with the Washington State University and other entities.

Registration is due by April 1 each year. Your current registration expires December 31.

RCW 15.60.250 Liability for acts or omissions. (Protection for registered beekeepers)

A person who owns or operates an apiary, is a registered apiarist under RCW 15.60.021, and conforms to all applicable city, town, or county ordinances regarding beekeeping, is not liable for any civil damages for acts or omissions in connection with the keeping and maintaining of bees, bee equipment, queen breeding equipment, apiaries, and appliances, unless such acts or omissions constitute gross negligence or willful misconduct.

<https://cms.agr.wa.gov/WSDAKentico/Documents/Forms/current-6116-Beekeeper-BrokerRegistration.pdf>

An East Nashville Restaurant Begins Selling Its Fermented Honey

East Nashville's Butcher & Bee has a new product to share. Nobody can match the funky zing of this honey recipe. And it's not something you'd probably want to make yourself, because the difference between pleasantly fermented honey and, well, garbage honey is not an easy thing to manage.

After a lot of research, the team at the Bee figured out how to offer this delicious treat on a retail scale. We start with raw and minimally processed honey from a farmer in Beaufort, S.C. Then, we add a tad of water to disrupt the ecosystem, which in turn allows healthy bacteria to enter the mix. Finally, we add the reduced liquid from cooking down fresh hot peppers. The result is a pleasantly funky, sweet heat glaze that you can put on just about anything.

It tastes great on whipped feta, but it's also delicious on fried chicken, cheese boards, turkey sandwiches, cocktails or even in a salad dressing.

You can pick up an 8-ounce bottle of funny honey goodness for \$10.25 plus shipping at [the Bee's online storefront](#). *(BTW, I ordered a bottle, Bill)*

PNW Honey Bee Survey

Entomologist Dr. Dewey Caron here sending out pre-spring greetings & upcoming survey reminder. Wow what a year we have had here in the pacific northwest. Pandemic, wildfires and a historic ice storm! After our mild January the colder February is actually better for our bee colony overwintering in order to slow colony expansion.

Once the weather warms check on food stores by hefting at the back. It is too early to feed syrup as we do not want to stimulate or add to moisture stress.


If you feel the hive is short in required food you could consider feeding a homemade sugar brick until it warms up enough for syrup. Make a sugar brick by mixing a small amount of water to make a thick slurry of cane/beet sugar and letting it stand overnight to solidify. An alternative would be to feed drivert (confectioners) sugar but do not use brown sugar or any sugar that contains starch.

Peek quickly under the lid & below covers for water staining or sign of excess moisture in the hive. If seen, consider using some form of absorption filler material aka quilt box for the remainder of damp months or plan for this addition to next year's wintering set up.

Clean bottom boards to clear the path for new bees and save them some labor (& honey store energy). This could be something as simple as brushing clear with a down feather for now until the temperatures are above 60 degrees and it's safe to physically open the hive long enough to "change the underwear".

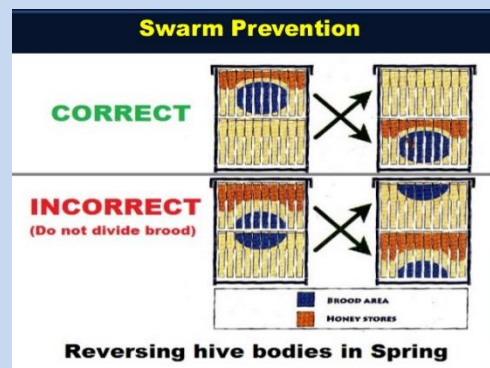
The 12th annual Pacific Northwest Honey Bee Loss Survey at <https://pnwhoneybeesurvey.com/survey/> will open up EARLY this year on March 15th and be available until May 1st. Please consider downloading and filling out the note sheet to aid in quick survey entry. Many have found that this simple resource has been key to have on hand in the bee yard throughout the year not only to track items but to remind of alternative bee husbandry options.

Lastly, if you would like an email reminder when the survey opens please visit <https://pnwhoneybeesurvey.com/resources/reminder/> today.

We hope to see great health in our PNW honeybees and fellow beekeepers this spring! 

Reversing Hive Bodies

Spring is the time to get your colony in shape and ready for the nectar flow. Coming up at our March meeting Dr. Caron will discuss spring management but I will risk sharing an opinion on one frequent beekeeper deed and that is reversing hive bodies. When you overwinter with 2 deep hive bodies you will find that the bees move up into the top box as stores are depleted in the lower box. Then when you do your first hive inspection in spring on that nice, calm 60 degree day you swap positions so the top is now the bottom box. It's a swarm control technique that relieves congestion and allows the bees to expand the brood nest into a now empty area above them. But, should you do it? Some say that bees naturally move down since that is how it is done in natural tree cavities and why the french monk Emile Warre designed a hive system that adds a fresh box below the active box. But if you watch a frame with honey, pollen, and brood you'll notice that the bees use the stores nearby to feed the larvae which opens up space for the queen to lay. Thus, the brood nest expands out and up until that frame is essentially all brood. Then if there is more space above, the queen will move up into the open area. So placing an empty box above will stave off swarming from the conditions of hive crowding or brood nest congestion (lack of egg laying space). But be aware that there are other conditions that may also lead a colony to swarm.



Reversing hive bodies should be in your bucket of tricks. Something you do when the conditions are right. First, you should not reverse until night time temps are above 40 and daytime temperatures are over 50. Since the bees have moved up into the warmer top box, suddenly creating a large empty area above can lead to chilling. This is especially true on a weaker hive. I would be more inclined to consolidate a weaker hive back to just one box. I also don't reverse before April. Secondly, inspect the top box in the normal fashion (not covering inspections today) making sure that's where the bees are along with their brood. Then I look into the bottom to be sure it is essentially empty of bees and stores. If there is any brood in the bottom box then don't reverse. Splitting the brood nest area vertically is a bad move. You may still be able to reverse at a later date if the conditions support it.

What is blooming in March?

Mustard: pollen, nectar	Cottonwood: pollen, resin	Manzanita: pollen, nectar
Willow: pollen	Elderberry: pollen, nectar	Heather: pollen, nectar
Dandelion: pollen, nectar	Alder: pollen	
Maple: pollen, nectar	Helleborus spp: nectar, pollen	
Crocus: pollen, nectar	Snowdrop: pollen, nectar	

Parasite Hijacks Iron in Honey Bees

An Agricultural Research Service entomologist has discovered the *Nosema ceranae* parasite that causes major problems and death in honey bees works by hijacking its host's iron for itself.

Iron is as essential a micronutrient for honey bees. Honey bees usually get enough to meet their needs from their flower pollen diet. They use iron in their immune system and for reproduction and development.

If honey bees lose the battle of infection with *N. ceranae*, the gut parasite begins to hijack the iron in the flower pollen that the honey bee has eaten before the bee can absorb it.

How the *N. ceranae* does that involves a protein called transferrin that, in honey bees, is responsible for binding and transporting iron from pollen out of the gut and throughout the bee. *N. ceranae* uses the honey bee's transferrin to divert the iron to its own use, causing the honey bee to produce more transferrin as the bee's system becomes starved for iron. Since there is no truly effective treatment for *N. ceranae*, this study suggests a welcome possibility for a new treatment that might be based on regulating iron or the synthesis of transferrin,

This research was published in [Plos Pathogen](#).