



# CENTRAL COAST BEEKEEPERS NEWSLETTER

April 2021

ISSUE NUMBER 59

NEXT MEETING APRIL 28<sup>TH</sup> 2021

**Max Kuhn will be presenting “Spring Management and Hive Inspections”**

The meeting will be on **April 28th at 6:30pm via Zoom**. We will mail out a link to this one-hour zoom meeting about 3 days prior.

## **PRESIDENT’S MESSAGE**

**By Stu Willason**

The rain seems to have stopped at least for a while and the bees are taking advantage of the good weather. It seems that all four of our hives on our property made it through the winter. Wow, this is the first time in a few years that we had 100% survival (at least they are all alive as I type). The key to their survival was most likely a change that we made to our beekeeping: we monitored our sticky boards for mites throughout the fall and winter and treated aggressively with oxalic acid vapor.

***How did everyone’s hive(s) survive this past winter? Please let us know by email and we will share the results at our next zoom meeting.***

Also, there is still time to fill out the official PNW online bee survey if you haven't already. By sharing this information, we help everyone's bees. The PNW online survey - [www.pnwhoneybeesurvey.com/survey](http://www.pnwhoneybeesurvey.com/survey) - will extend through the month of April and should only take a few minutes to complete.

Swarm season is coming up and is probably the best time of the year to be a beekeeper. Catching a swarm is both exhilarating and rewarding - free bees, yes! We will talk about swarms for a few minutes at the beginning of the April meeting. For a great classic read about swarms and for detailed information on making and placing swarm boxes go to the Cornell University Library <https://ecommons.cornell.edu/handle/1813/2653> and download Thomas Seeley's *Bait Hives for Honey Bees* pdf.

### **This Month's Meeting**

During the main portion of our meeting Max Kuhn will be presenting "Spring Management and Hive Inspections". As most of you know, Max has a huge wealth of knowledge on bees so come to the meeting with questions. Hopefully everyone's hives will be operating at full tilt by the end April.

### **Last Month's Meeting**

Thanks to Rick Olson of our club who presented last month at our zoom meeting - *All About Queens*. A video of this lecture is posted on Youtube - [All About Queens by Rick Olson](#). It was an excellent presentation and is very much worth the watch. Rick is in the process of rearing queens and hopefully he will have "coastal queens" this year. Very exciting.

For those of you who are installing bees this year, Rick also did a video entitled - "Installing Package Bees and Nucs". This was the presentation he did for the Lane County Beekeepers a few weeks ago and they were kind enough to share the link with us - YouTube Video: <https://youtu.be/rklUYV01w4o>. You should also read Max Kuhn's fun and informative article in this newsletter about the process of packaging bees for sale.

***If you have any suggestions for topics for future zoom meetings, please let us know. We want to make the meetings as relevant as possible for everyone in the club so please share your thoughts and ideas, they are important!***

**If you haven't already done so, you can renew or start a new membership for only \$15 per person or \$25 per family. The membership form is on our website [CCBA Membership Form .pdf](#) If you are renewing, you can also use PayPal by sending it to the club's email: [centralcoastbeekeepers@gmail.com](mailto:centralcoastbeekeepers@gmail.com).**



See you on Wednesday April 28<sup>th</sup> at

6:30 PM!

## Meet a CCBA Member

Each month we'll be featuring one of the club's members to find out a little about their beekeeping passion. This month we are featuring Pat Wackford who lives in Toledo. Thanks for sharing, Pat!



### WHY I KEEP HONEY BEES

In 1980 my partner, at the time, and I bought 3.5 acres of land in the California foothills near the town of Grass Valley. The next year, we planted a veggie garden 30x30 feet and planted many different plants. That year we had enough to eat but none to freeze or can. Later that year I read an article on honey bees. I never saw honey bees in my garden only native bees. I went to the bee supply store in Sacramento and they recommended the equipment I would need. When I asked "where can I get bees for the hive", I was told that there was a bee club in Placer County and I lived about 5 miles from a beekeeper that sold bees. So I joined the club and met the beekeeper that lived nearby. His name was Randy Oliver. He

was also in the Placer County Bee Club. I bought a #3 package with a queen for about \$30. That next year we planted all the same veggies plants and ended up with more produce than we could eat, freeze, can and give away. There were no Varroa mites there. I did treat for Nosema and Tracheal mites. I had that hive for 8 years, never having to buy bees again.

I currently have one hive that survived the winter. It is a three-year-old hive.

My biggest mistake was trying to raise bees here in Oregon using my knowledge from California.

My biggest success is that I have kept a hive alive for 3 years in a row.

One tip for a fellow bee keeper is to watch the dates on the mite treatments you buy. They do have expiration dates. So only buy what you are going to use in a year or two. I lost a hive this year when I treated with a product that was expired.

I think I have two favorite bee books. My first book, First Lessons in Beekeeping by Dr. Keith Delaplane and Honey Bee Biology and Beekeeping by Dewey Caron.

The one tool I can't do without is my J Hook hive tool. My bees make a lot of propolis and it does the job pulling up frames.

I enjoy being a member of our club as there are so many different people keeping bees in different ways. I have learned a lot from them. Also, I was encouraged by members to get into the Master Beekeeper Program through OSU. I now hold a Journey Level Certification.

## Keeping Bees in April

By Max Kuhn

April in Oregon, here west of the Cascades at least, usually means the beginning of SWARM season. Swarm season for many of us is the most exciting time of the beekeeping year. But swarming is not the only reason to be excited. It is also the time of year when beekeepers are receiving their newly purchased bees. These bees usually arrive in the form of 3-pound packages or nucs. The bees have been ordered a few months before from a variety of suppliers located all over the US. Receiving these new packages or nucs can be as exciting as catching a swarm—especially for those unfortunate folks who are still waiting to catch that first one.

To those folks I say, “Don’t give up.” As long as we have honey bees, we will have swarms. And each year that you continue to keep bees, your chances of catching that swarm improve. So hang in there, your turn is coming.

Now back to the packages and nucs. A few years back, one of my beekeeper friends received one of those packages of bees and installed them as per directions into a ten-frame Langstroth style box. He placed the caged queen between two frames in this box, shook the remaining bees from the package into the same box, and closed it up for the night. He then added a feeder filled with sugar syrup. The next day he meandered out to the bee yard to have a look at the new hive. After watching the hive entrance for a few minutes and not seeing the expected bees coming and going, he sensed something was wrong and opened the hive for a closer look. Whoa! Every single bee was gone . . . vanished! No trace. Except one. There in her tiny little cage was the queen. The only bee left in the box!

How could this Happen? What would cause a package of bees to leave a perfectly good hive box, stocked with sugar syrup, and furnished with the latest in hive hardware!?!? —not to mention leaving their newly introduced queen still stuck in her cage? What kind of bees would do this? One possible answer to this mystery lies in the process of the building of the packages themselves.

If you have never had the opportunity to watch or participate in the package-building process, you are missing a real treat. If you ever have the chance to go and witness this event, grab it; it is worth the effort. For those folks actually working on the process, it is pure work. For the bees, it is pandemonium, but the end result of this event is the nice tidy little packages of bees that you bring home to install in their new home.

The package-making process involves a large box, of sorts, made from wire mesh to contain a large amount of honey bees. Into this box is inserted a size large funnel made of metal, or similar material, which provides a slick surface for the bees to slide through on their way into that box. The box and funnel are moved from bee hive to bee hive in the commercial beekeeper’s apiary. At each hive, workers choose a few frames of bees and, after checking to make sure the frames do not contain the queen, they then shake the frames over the funnel mouth. This causes the bees to slide through the slick funnel and into the mesh box.

The process is repeated until the box, which may contain a hundred pounds of bees, is full. The full box is then moved to another area where the bees are

scooped out with a scoop that holds about 3 pounds of bees. The scoop is emptied into the funnel again, though this time the bees are sent sliding into the wire-and-wood travel box, which you eventually receive and take home to your apiary. (I apologize at this point to the commercial beekeeping profession for my oversimplified description of their package-making process, a process they take very seriously and carry out with the utmost care and consideration of the honey bees.)

The above process is coupled with the little-known fact that as many as 20 percent of all bee hives might, in April and May, contain multiple queens. Yes, it is true. During these spring months, when a colony is preparing to swarm, it may contain more than one queen. Usually they are mother-daughter queens, and it is a temporary situation due to bad weather that forces the swarming colony to wait for clearing before completing the swarm process. The daughter queens are much smaller and less distinctive than the larger mother queens, which makes these virgin queens more difficult to see. I believe they can easily slip past the beekeepers preparing the packages for shipment.

Herein lies one possible reason for the absence of the bees in my friend's hive. When he installed his package of bees, it contained an extra queen! A battle might normally ensue between the two queens in this scenario, except for the fact that the one queen was contained in the small cage. So, the bees in this case, not being able to attack the caged queen, may have opted for another alternative, which was to abscond or swarm.

What if this situation were to happen to you? What would you do? I have given it some thought and decided I probably would not complain to the company selling me the package. What could I say? "Hey you guys sold me two queens for the price of one, so I want my money back." Naw . . . that might not work.

I must point out that a nuc does not have the problem described above. The nuc is normally made with a laying queen that is not caged and has already been accepted by her hive mates. The nucs are more expensive, however.

Happy Swarm hunting. May your packages have only one queen!

## What is Burr Comb?

According to Wikipedia, **burr comb** and **brace comb** and **bridge comb** are portions of [comb](#) built by the bees in places than in the intended place in the [frames](#). Burr comb and brace comb and bridge comb can be avoided or minimized by keeping the width of all internal spaces inside the hive to the "[bee space](#)" limit of  $\frac{1}{4}$  to  $\frac{3}{8}$  inch (6.4 to 9.5 mm).

A common place for burr comb is on top of frames, particularly if the hive has been assembled with a void above the frames.

If a frame is too shallow top-to-bottom for the level of the hive that it has been put in, the bees may build comb hanging from the bottom of that frame to fill the available space.

Brace comb and bridge comb can be a nuisance if they join together hive parts which should stay separate.

Care should be taken when removing burr comb, because sometimes burr comb may contain brood, including sometimes queen brood, or the adult [queen bee](#) may be on it.



Photo on the left is a member photo of a burr comb from a healthy hive for this time of year!

## Honey bee behavior from within the hive

### Unique videos capture detailed instances of rare honey bee behaviors like mouth-to-mouth larval feedings

Unique video from within beehives provides special insight into honey bee behaviors, according to a study published March 17, 2021 in the open-access journal *PLOS ONE* by Paul Siefert from Goethe-Universität, Germany, and colleagues.

Though the European honey bee (*Apis mellifera*) famously lives in large and complex colonies, it's the collective behavior of the hive's unique individuals that determines the colony's success -- behaviors such as nest building, foraging, storing and ripening food, brood nursing, temperature regulation, hygiene, or hive defense. Most of these activities happen within the structure of the hive itself and aren't easily observable -- but in this study, Siefert and colleagues were able to video record individual honeycomb frames and even cells from within special glass-framed observation hives, providing new insights into honey bee behavior at the individual level.

For these videos, the authors continuously recorded truncated honeycomb cells within the brood area of their observation hives with the frames turned 90 degrees for visibility, permitting a sideways view into the cells in the middle of the colony.

The recordings show a range of worker, offspring, and queen behaviors within the brood cells, including the queen's egg laying; embryonic hatching and larval cocooning; nurse worker bees' inspection and feeding of larva; workers' use of wax scales and existing nest material to remodel combs; storage of pollen and nectar in cells; and hygienic practices, such as cannibalism, grooming and surface cleaning. Additionally, Siefert and colleagues captured several processes previously undocumented, such as mouth-to-mouth feeding from nurse bees to larvae as well as nurse bee thermoregulation within cells containing the developing brood prompting the descent of eggs within their comb cells.

The wealth of video recordings providing specific instances of honeybee behavior will prove insightful for scientists as well as beekeepers and the general public. The authors especially hope their material will help raise awareness of the critical declines in pollinator and bee populations, and encourage the use of their work for educational purposes.

The authors add: "In this study, the authors provide a comprehensive source of online video material that offers a view of honey bee behavior within comb cells of a functioning colony. By providing a new mode of observation for the scientific community, beekeepers, and the general public the authors call attention to the general decline of insect biomass and diversity."





# MeliBio makes honey without bees

The California startup said 15 food and beverage companies have committed to using its lab-produced sweetener, which it expects to have on the market by the third quarter of 2021.



*Pixabay Photo*

[Christopher Doering@cdoering](mailto:Christopher.Doering@cdoering)

After watching entrepreneurs flock to California to make meat, milk, eggs and other products indoors without the customary animal, Darko Mandich decided last November to travel 6,000 miles with the hopes of doing the same with one of his favorite ingredients: honey.

Without any connections in the San Francisco area, Mandich and his wife set out on a trip from Serbia for the Golden State on what he called "a calculated risk" to suss out whether people would be willing to invest in his business and get his dream off the ground.

Before long, Mandich found his co-founder, Aaron Schaller who was finishing his Ph.D at UC Berkeley with a degree in biochemistry, connected with potential investors. Instead of heading back to Serbia as he initially planned, the 29-year-old stuck around to start his own business making honey, but without bees.

"I realized that after we make burgers without cows and we make milk without cows that we also should make honey without bees," said Mandich, the CEO of MeliBio. "It's a very important product that we need to think of alternative ways to produce it in order for it to be sustainable."

## Honey tops sugar

U.S. honey production totaled 37 million pounds in 2019, down from 44.5 million pounds in 2001, according to data from the USDA's Economic Research Service. Despite the decline, the value of production soared 200% to \$108 million during the same period. The National Honey Board estimated U.S. per capita consumption of honey is around 1.3 pounds annually.

In 2020, honey passed sugar as the most preferred sweetener in the U.S., the National Honey Board said. Much of this increase likely comes as honey has benefited from its reputation as a natural ingredient and a healthier sugar substitute rich in antioxidants that also can help lower bad cholesterol and blood pressure.



*Permission granted by MeliBio*

MeliBio so far has raised nearly a quarter of a million dollars since it was formed last December. Mandich and Schaller have put in \$40,000 of their own money before the business was incorporated, with the rest coming later in April from Big Idea Ventures, a venture capital fund and startup accelerator in the food space. MeliBio plans to raise additional funds from a seed round in the coming weeks to increase its R&D team and lower its production cost compared to traditional honey from bees.

Much of MeliBio's work is currently being conducted in the lab where researchers are testing out different approaches taken from biology, plant science and other

industries to create honey prototypes; the best practices from each will ultimately be combined to make honey. In a recent blind taste test, individuals were unable to distinguish it from the traditional product, Mandich said.

The company will focus initially on making honey that mirrors the same taste, texture and nutritional qualities as what bees produce before venturing out into trying to replicate popular varieties such as Manuka honey from New Zealand or Acacia honey in Western Europe. So far, 15 food and beverage companies of various sizes have committed to using MeliBio's honey once it's on the market in the third quarter of 2021.



## Introduced honeybee may pose threat to native bees

**A Curtin University study has found the introduced European honeybee could lead to native bee population decline or extinction when colonies compete for the same nectar and pollen sources in urban gardens and areas of bush.**

Published in the *Biological Journal of the Linnean Society*, the research found competition between the native bees and the introduced European honeybee could be

particularly intense in residential gardens dominated by non-native flowers, and occurred when the bees shared the same flower preferences.

Under these conditions, it would appear that European honeybees, being very abundant, and effective foragers, with the ability to exploit a wide range of flowers, can outcompete native bees for nectar and pollen resources.

Lead author, Forrest Foundation Scholar Miss Kit Prendergast, from Curtin's School of Molecular and Life Sciences said the research was conducted over two years in urban gardens and areas of native vegetation on the Swan Coastal Plain at Perth, Western Australia and revealed a complex relationship between native and introduced bees.

"Not all native bee species were impacted, but when native bees preferred many of the same flower species as honeybees or were of larger body size, meaning they needed more food, this was when honeybees had a negative impact on native bees," Miss Prendergast said.

"This occurs due to resource competition, where honeybees were more successful at exploiting food resources from flowers, leaving not enough nectar and pollen to support native bee populations.

Unlike native bees, honeybees occur in colonies of tens of thousands of individuals, and are better at telling other colony members where flower patches are. This communication is done by using a combination of movement and vibrations known as the "waggle dance" and using scent.

"Competition from honeybees was particularly fierce in residential gardens where there are lower proportions of the native wildflowers that our native bees have co-evolved to forage on," Miss Prendergast said.

"This impact of competition with a super-abundant, domesticated and feral introduced bee, when combined with pressures from habitat loss as a result of increasing urbanization and agriculture, especially livestock agriculture, places some native bee species at risk of becoming endangered or even extinct."

Miss Prendergast said planting more flowering plants, particularly those preferred by vulnerable species of native bees, could help prevent them from declining in number. Controlling the density of honeybees would also be critical in reducing the pressure on vulnerable native bees.

"Native bees are an integral and important part of any ecosystem, including in the Southwest Australian biodiversity hotspot in which our research was conducted," Miss Prendergast said.

"European honeybees have been introduced around the world and pose an added threat to many native bee species already at risk of declining numbers or even extinction due to increasing urbanization."

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