



# CENTRAL COAST BEEKEEPERS NEWSLETTER

November 2021

ISSUE NUMBER 64

NEXT MEETING NOVEMBER 17TH 2021

## **Nov 17<sup>th</sup> In-Person Club Meeting & Holiday Celebration:**

We will be having an in-person meeting at Judi's "barn" in Seal Rock on **Wednesday November 17th at 2:00PM**. This is the same location as our **October meeting**. We are requesting that all attendees be fully vaccinated for Covid-19. *Please RSVP email to confirm attendance and get detailed directions (if you need them).*

### **Topics:**

- 1) Election of Officers and Board for 2022**
- 2) Celebrate the upcoming holidays and celebrate surviving another year of Covid.** The club will provide some liquid refreshments, appetizers and nibbles for all to enjoy. Feel free to bring an edible small treat of your own if you wish.
- 3) And of course, great bee stories**



## PRESIDENT'S MESSAGE

By Stu Willason

First and foremost I would like to thank Judi for graciously hosting our past few bee meetings at her and Peter's wonderful rural property in Seal Rock. Their generosity and delightfully huge "barn" has made "Covid Days" seem like normal times again in a safe and fun setting.

Like the last couple of meetings, we had great bee discussions during the October meeting. We heard about cutting edge bee research that was presented the previous week at the OSBA annual meeting. Rick, Becca and Max gave us a great summary. I learned that *Varroa* are even worse than I thought. They apparently have "snorkels" that allow them to "breathe" and survive while submerged in water **or alcohol** for up to 30 minutes. And, they are evolving to a smaller size, most likely in response to our treatments. Wow, even though I truly hate those evil parasites, I do respect their tenacity.

We also talked about preparing hives for winter. Moisture control, mouse guards, ample food storage and of course, Varroa were the main points of that discussion. In addition, we had a very successful "seed swap" with Steve, Becca, Judi and Britte bringing seeds for everyone to plant for their favorite pollinators.

After a summer of no rain we are suddenly getting dumped on with moisture here along the coast. According to NOAA, this year is transitioning to La Nina (80% chance) which typically means higher than normal rainfall for the Pacific

Northwest region. Click on [NOAA](#) to get the full long-term weather report.

Moisture, especially the mega moisture that we experience along the coast, can be extremely bad for bees. So, if you don't have a moisture control box for the top of your hive you might consider getting one or making one. Just



remember to only open your hive(s) during warm days.

Our own honey bees are real opportunists and have managed to bring in pollen in between the rainy days of November. Gotta love those foragers!

The 2020-2021 Pacific Northwest Honey Bee survey is now published at <https://pnwhoneybeesurvey.com/2020-21-survey-reports/>. Overwintering hive losses in Oregon were at 35%, which is actually terrible, but better than the previous 2 winters (38% & 48%). It is worth your while to go to the website link and read the excellent report in full.

And finally, as mentioned above, elections for officers and board members for 2022 CCBA will take place at our November meeting. So, if you are willing to help either as an officer (eg President/Vice President) or a board member, please email your interest to the club's email address and we will be happy to answer any questions you might have concerning leadership roles.

***We look forward to seeing everyone on Wednesday November 17<sup>th</sup>!***

## AT HOME BEEKEEPING SERIES WEBINAR

Join via Zoom at: <https://auburn.zoom.us/j/904522838>

Join via Facebook Live at: <https://www.facebook.com/LawrenceCountyextension/>

These webinars take place on the last Tuesday of the month, 4:40pm-5:30pm.

Beekeepers the chance to attend virtual meetings from the comfort of home using a computer or mobile device. Each event will bring participants up to date on timely beekeeping topics. Time for Q&A included.

Topics include:

- Nov. 30: Viruses of honey bees, with Alexandria Payne (TAMU)
- Jan. 25: The many facets of honey bee nutrition, with P. Chakrabarti (MSU)
- Feb. 22: Integrated Pest Management in the hive, with Cameron Jack (UFL)
- March 25: Methods for controlling Varroa that work, with Jennifer Berry (UGA)
- April 26: How to make great queens and avoid poor ones, with David Tarpy (NCSU)

## Honey without Bees?

MeliBio, Inc. the company using proprietary technology to make real honey without bees has unveiled its first product: world's first real honey made without bees as a plant-based ingredient for B2B customers and foodservice.

More than 100 members of climate tech, food tech and investor communities in the San Francisco Bay Area had a chance to be among the first in the World to sample MeliBio's honey made without bees at an event organized at Cell Valley Labs, an incubator and networking space in Berkeley, California.

After extensive R&D, MeliBio successfully scaled their method for making honey without bees on a manufacturing level, showing the ability to serve multiple clients in their needs for non-animal honey ingredients. The California-based company is currently taking orders from existing and new foodservice and B2B customers for deliveries starting from the end of 2021, and the beginning of 2022.

MeliBio, Inc. has developed a scientific approach to replace honeybees as a medium of honey production, and is providing solutions to several sustainability and supply chain issues of the broken honey industry valued at \$9 billion in 2020. Recent studies show that the industry's sole reliance on honeybees is making 20,000 wild and native bees crowded out from their habitats and vanishing at an accelerated rate. Additionally, the global honey supply chain faces difficulties in keeping up with demand with recent honey harvests being heavily affected by climate change causing low yields of honey and price volatility.

Darko Mandich, CEO and Co-Founder of MeliBio said: "MeliBio is founded with the mission to make food in a way to save our planet Earth by ending our use of bees in honey production, and thereby helping to restore bee biodiversity amongst native and wild bees worldwide. Scientific advancements have created a very exciting position where humans can finally make one of their favorite foods without the use of animals. Honey is an ingredient found in every product category, from food to beverage and personal care products for which MeliBio is now providing a plant-based option. By bringing delicious,

nutritious and real honey made without bees to the market, we are shaping our present and future in a way that is better for bees and for humans.”

“Big Idea Ventures is backing MeliBio’s mission to take bees out of the honey supply chain, ensuring the wild pollinators and native bees vital to our ecosystem can thrive. MeliBio will be first to market with bee-free real honey in the US and APAC, used anywhere bee-derived honey is used today.” - Andrew D. Ive, Managing General Partner.



## ‘No one knew they existed’: wild heirs of lost British honeybee found at Blenheim

**The ‘ecotype’, thought to have been wiped out by disease and invasive species, is thriving in the estate’s ancient woodlands**



Bee conservationist Filipe Salbany handles the Blenheim bees without protective kit as they are ‘extremely relaxed’. Photograph: Filipe Salbany

## **Donna Ferguson**

Sun 7 Nov 2021 06.15 GMT

Thousands of rare forest honeybees that appear to be the last wild descendants of Britain's native honeybee population have been discovered in the ancient woodlands of Blenheim Palace.

The newly discovered subspecies, or ecotype, of honeybee is smaller, furrier and darker than the honeybees found in managed beehives, and is believed to be related to the indigenous wild honeybees that foraged the English countryside for centuries. Until now, it was presumed all these bees had been completely wiped out by disease and competition from imported species.

While feral honeybee colonies – usually created by swarms of non-native bees that have left a nearby managed hive – are occasionally found in the UK, there was no evidence that self-sustaining colonies of native, tree-nesting honeybees still existed in England, and no record of the wild subspecies living in Blenheim.

Filipe Salbany, a [bee conservationist who found 50 colonies](#) of the rare honeybees in Blenheim's 400-acre estate, said: "These bees are quite unique in that they live in nests in very small cavities, as bees have for millions of years, and they have the ability to live with disease. They have had no treatment for the varroa mite – yet they're not dying off."

The varroa mite, [a parasite that feeds on and attacks honeybees](#), arrived in Britain in 1992 and decimated the UK's population. Salbany believes the bees he has found have evolved to survive. "We are not seeing the deaths we would expect to see with varroa."

Filipe Salbany with a swarm of wild bees. He has found 50 colonies to date and thinks they have evolved to ensure their survival. Photograph: Paul Sharkey Photography

Unusually, the bees swarm with multiple queens – up to nine in some cases – to ensure the colony's survival, and have been recorded foraging for honeydew on the treetops in temperatures as low as 4C. Most bees will stop flying at 12C. "A wild bee that has adapted to the environment is called an ecotype, and this bee could be a very precious ecotype – the first wild bee that is completely adapted to living in the oak forest."

The results of DNA samples taken from the bees are expected within the next three to four weeks, but Salbany is confident it will show the bees are descendants of an ancient native species. “I think the majority of the genetics are going to be of an old English bee, of something that was here many, many years ago.”

His preliminary analysis of the wings of the honeybees strongly suggests they are related to indigenous honeybees that once lived in Britain. “They are not from the imported stocks of bees that people bring in. The wings are smaller and their veins are very distinct.”



The wild bees have been discovered in the 400-acre estate around Blenheim Palace. Photograph: Blenheim Estate

The bees’ cubital index, a method for differentiating breeds of honeybees, also confirmed they are “more of an indigenous bee” than anything else, he said, but their adaptations have made them unique and peculiar, and they have very little banding. “Supposedly, wild tree-nesting honeybees which can sustain themselves do not exist, so nobody knows what type of wild, self-sustaining honeybee is actually left in the UK.”

One of the nests he found was at least 200 years old and he estimates that the bees have been living on the Blenheim estate, which dates back to the middle

ages, for “quite a few” centuries. Unusually, they have built their nests in tree cavities a quarter of the size of a normal beehive, 15 to 20 metres off the ground, and despite several ecological surveys over the years, “nobody knew they existed”. The entrances to the nests typically have a diameter of less than 5cm.

There are no managed beehives on the estate, which Salbany thinks has played a critical role in the wild bees’ survival, while imported bees from hives nearby are likely to have been deterred from flying to Blenheim to forage by the landscape. “It’s a closed environment, in terms of bee access, because there are damp and humid valleys which form physical barriers.”

The woodlands, which Salbany describes as a paradise of biodiversity, are not open to visitors and no planting or gardening takes place there. “There’s very little human interaction.”

The wild bees seem able to live in balance with the environment and in harmony, not only with each other but with wasps and bumblebees that live in the forest. “For the 50 honeybee colonies that we have found, we probably have 500 empty sites for them to swarm into. They do not populate every single site: they’ve reached an equilibrium with their environment.”

Remarkably, he found two colonies of wild bees living within five meters of each other, in a single tree – right next to a wasps’ nest. “That is quite unique.” He thinks wasps don’t try to rob the bees because the bees build their nests very high up the trees and make their entrances so small: “There’s enough forage for the wasps in the forest not to go and bother the honeybees.”

As a result, the bees are extremely relaxed and he does not need to wear any protective equipment around them. “I can put my hand in the nest. They are very calm.” Their honey, he said, tastes “incredibly pure”. It is very floral as the bees like to feed on dandelions, blackthorn and sunflowers. “The smell of it is just extraordinary.”

He now suspects there may be other colonies of wild, tree-nesting bees in the UK that have not yet been discovered: another reason, he says, that “we need to protect our ancient woodlands. Because that’s where we are likely to find these bees.”

In total, about 800,000 wild bees have been discovered. Salbany hopes the news will have wide-ranging implications for Britain’s large, imported population of managed honeybees, which can “decimate the countryside” for



native pollinators when they forage. “This species could be used as stock for beekeepers.”

Dr Rob Stoneman, a director at the [Wildlife Trust](#), said the discovery of the wild bees was “extraordinary” and demonstrated the value of the UK’s ancient woodlands. “These kinds of stories give us hope and motivation to create a wilder future.”

What’s the buzz?

- Wild honeybees are resistant to the varroa mite, a deadly parasite for other bees
- They can forage in temperatures as low as 4C
- They’re happy to live near wasps and other honeybee colonies
- They nest in trees 15 to 20 metres off the ground
- They live in colonies eight to 10 times smaller than managed beehives
- They have multiple queens to ensure the colony survives, and the fittest queen rules
- They’re smaller, darker and furrier than imported honeybees, with smaller wings and more distinct veins.



Filipe Salbany with a swarm of wild bees. He has found 50 colonies to date and thinks they have evolved to ensure their survival. Photograph: Paul Sharkey Photography



Honeybees use social distancing when mites threaten hives

## Honeybees use social distancing to protect themselves against parasites

November 1, 2021

Honeybees increase social distancing when their hive is under threat from a parasite, finds a new study led by an international team involving researchers at UCL and the University of Sassari, Italy.

The study, published in *Science Advances*, demonstrated that honeybee colonies respond to infestation from a harmful mite by modifying the use of space and the interactions between nestmates to increase the social distance between young and old bees.

Co-author Dr Alessandro Cini (UCL Centre for Biodiversity & Environment Research, UCL Biosciences) said: "Here we have provided the first evidence that honeybees modify their social interactions and how they move around their hive in response to a common parasite.

"Honeybees are a social animal, as they benefit from dividing up responsibilities and interactions such as mutual grooming, but when those social activities can increase the risk of infection, the bees appear to have evolved to balance the risks and benefits by adopting social distancing."

Among animals, examples of social distancing have been found in very different species separated by millions of years of evolution: from baboons that are less likely to clean individuals with gastrointestinal infections to ants infected with a pathogenic fungus that relegate themselves to the suburbs of anthill society.

The new study evaluated if the presence of the ectoparasite mite *Varroa destructor* in honeybee colonies induced changes in social organization that could reduce the spread of the parasite in the hive. Among the stress factors that affect honeybees, the *Varroa* mite is one of the main enemies as it causes a number of harmful effects on bees at individual and colony level, including virus transmission.

Honeybee colonies are organized into two main compartments: the outer one occupied by the foragers, and the innermost compartment inhabited by nurses, the queen and brood. This within-colony spatial segregation leads to a lower frequency of interactions between the two compartments than those within each compartment and allows the most valuable individuals (queen, young bees and brood) to be protected from the outside environment and thus from the arrival of diseases.

By comparing colonies that were or were not infested by the *Varroa* mite, the researchers found that one behavior, foraging dances, that can increase mite transmission, occurred less frequently in central parts of the hive if it was infested. They also found that grooming behaviors became more concentrated in the central hive. The researchers say it appears that overall, foragers (older bees) move towards the periphery of the nest while young nurse and groomer bees move towards its center, in response to an infestation, to increase the distance between the two groups.

Lead author Dr Michelina Pusceddu (Dipartimento di Agraria, University of Sassari) said: "The observed increase in social distancing between the two groups of bees within the same parasite-infested colony represents a new and, in some ways, surprising aspect of how honeybees have evolved to combat pathogens and parasites.

"Their ability to adapt their social structure and reduce contact between individuals in response to a disease threat allows them to maximize the benefits of social interactions where possible, and to minimize the risk of infectious disease when needed.

"Honeybee colonies provide an ideal model for studying social distancing and for fully understanding the value and effectiveness of this behavior."

The study involved researchers from UCL, the University of Sassari, the University of Turin and the Martin Luther University Halle-Wittenberg (Germany).

### Story Source:

[Materials](#) provided by [University College London](#). Note: Content may be edited for style and length.





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