

# THE MARIN BEEK NEWS

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March 2014

## What You Missed

Our last meeting featured a talk by Dr. Marla Spivak, Distinguished Knight University Professor at the University of Minnesota.

Dr. Spivak began her talk discussing her present research on propolis and its role in honey bee health. Propolis comes from the resins of various plants. The resins are defensive secretions from plants and are highly anti-microbial. Bees collect resin from plant leaves, similar to pollen collection. It is difficult for the bees to remove the resin from their bodies and the foragers often need assistance in removing it. Propolis is a combination of resin and beeswax. The bees normally use it to seal cracks in the hive.

Dr. Spivak started researching propolis by studying bee trees. The hive cavity in bee trees was usually found to be lined with propolis. This propolis envelope was found to help colony immunity by reducing microbes in the nest cavity.

This observation led to her first study of propolis. The goal was to find out if propolis benefits the immune systems of honey bees. She dissolved the propolis in ethanol to create a spray, which could be applied to the inside surface of bee hives. The control group of colonies was sprayed with just ethanol. She found that bees in the hives that had the propolis applied to the interior had quieter immune systems.

This led to another question, which is the subject of a current study: Does the immune benefit depend on placement of the propolis? She treated a number of hives with propolis, 12 hives had propolis applied only to the top portion of the hive, 12 hives had a full envelope of propolis applied and 7 hives had only the ethanol spray applied, without propolis. After the first year of the study 10 hives that had the partial envelope, 9 hives that had the full envelope and 4 hives that had only the ethanol spray had survived. None of the colonies were treated and disease levels appeared to remain low. The colonies with the propolis envelope had significantly lower levels of their

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## What's the Buzz

Our next meeting will be on Thursday March 6, 2014 at the American Legion Log Cabin, 20 Veterans Place, San Anselmo, CA. starting at 7:30 pm. The meeting will feature a talk by Dr. [Eric Mussen](#), UC Extension Apiculturist, beekeeper extraordinaire and longtime presenter in the annual speaker series. Eric will speak on the current state of beekeeping. This will be Eric's last presentation to our club before he retires.

### Upcoming Meetings:

#### April 3, 2014

Dr. [Maryann Frazier](#), Sr. Extension Associate in the Entomology Department at Penn State University. Dr. Frazier's research includes determining the effect on honey bee colonies of pesticide residues in pollen collected by foraging bees.

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immune-related gene transcript which, Dr. Spivak related, is a good thing. The study showed that any amount of propolis envelope is helpful to colony health. This winter they are repeating the experiment and are also measuring viral levels.

She wants to also study if bees are selecting resin based on the viruses that they are encountering.

Dr. Spivak suggested that building hive bodies using rough-sawn lumber or interior surfaces that had been roughened in some way might encourage the bees to build a propolis envelope. Another method might be tacking hardware cloth to the interior faces of the boxes.

Her conclusions are that propolis is important to colony health, increasing colony fitness. There are still a lot of questions regarding the actual mechanism of propolis and identification of the active compounds that make propolis effective.

Dr. Spivak then presented the preliminary results from a study that is being conducted by one of her graduate students, Judy Wu, in the sub-lethal effects of Neonicotinoids (neonics) on honey bees. Neonics work by linking to the insect's nicotine receptors. This causes an overstimulation of their nervous system which exhausts the insect and may lead to paralysis and death.

Neonics are used primarily in three different ways:

1. Seed treatment, which transmits only a low level of the pesticide to the plant's nectar.
2. Soil treatment, which transmits a much higher level of pesticide to the plant's nectar.
3. Tree injection, which transmits a very high level of pesticide to the plant's nectar.

The toxic level of neonics to adult honey bees ranges between 38 and 400 parts per billion (ppb); but the sub-lethal effects occur at a much lower rate of exposure.

Some of the effects that their study is finding:

1. Disruption of feeding by the nurse bees.
2. Significant reduction in the collection of pollen, although nectar forage did not seem to be affected.
3. Increased immune level response, even at low exposures.

As part of the study they fed various amount of imidacloprid to queens and observed the following

effects:

1. Egg laying rate was reduced.
2. The queen spent more time inactive.
3. The brood pattern was reduced significantly.

Dr. Spivak closed saying that neonics are chronically present in plants, even when not needed. Urban landscape application rates can be very high. They are overused by homeowners and in nursery plants, for cosmetic reasons. She encouraged everyone to plant bee friendly flowers and to avoid contaminating them with pesticides.

### May 1, 2014

Dr. [Gordon Frankie](#), Professor of Environmental Science, UC Berkeley. Dr. Frankie's research focuses on the behavioral ecology and community organization of solitary bee species in selected environments in California and Costa Rica.

### June 5, 2014

Dr. [Deborah Delaney](#), Assistant Professor at the University of Delaware. Dr. Delaney's research includes the genetic characterization of unmanaged bee colonies, [savethehives.com](http://savethehives.com) feral bee project, and evolutionary biology of honey bees.

## From the Librarian's Desk

We have a couple of new books in the library this month, both by Larry Connor who is a frequent contributor to Bee Culture and American Bee Journal Magazines:

- Bee-sentials A Field Guide
- Bee Sex Essentials (this will be the one in the brown paper wrapping ...!)

Stop by the library table and see if something piques your interest. We have a great selection of bee-related books, videos & magazines. Your Club membership includes borrowing privileges (and returning obligations!)

## Hive Tips

**Prevent your bees from swarming: make sure there is adequate space in the brood chamber.** If you have not already checked your hive since last fall, it's time to do so. **Colonies are building quickly.** If your bees are starting to get crowded, add more space. Most importantly – be sure there is contiguous space in the brood chamber. If you add additional space, but there is only honey between it and brood area, you will not prevent brood area congestion – which is the cause of swarming.

- **If we get a lot of rain, will your bees need food?**

Colonies (particularly smaller ones) that overwintered successfully may be building up quickly with our warm weather and available forage. But, some may be doing so hand to mouth. This could even lead to starvation if we get successive days of rain and bees are kept inside – and capped brood starts to emerge. Consider feeding if you do not see ample pollen or nectar stores.

- **Considering splitting?**

Drone reports from around the county are indicating that mature drones are – or will soon be – out and about. Keep in mind that research shows that well mated queens do better in the long term. That means plenty of drones out flying during queen mating flights. It takes 24 days for drones to go from an egg to cell emergence. It takes an additional 14 days to reach full maturity. Some beekeepers in the county are holding out a little longer for a greater mature drone population. Some beekeepers are concerned about foraging resources drying out early this year (like in 2013) and therefore limiting new colony build up, and argue that earlier splitting will help new colonies take advantage of what's out there now.

**A Simple Formula for Splitting: #7 Split = 2+2+2+1 (for a 5 frame nuc box)**

- 2 frames of brood (one capped, one mixed age that has eggs/young larvae from which bees can start queen cells)
- 2 frames of food (include pollen and nectar/capped honey)
- 2 frames of bees shaken in (preferentially from brood frames that have a lot of nurse bees;

return brood frames to parent hive after shaking bees into your split)

- 1 empty frame
- Check split in 2-3 days to be sure they are making queen cells (no queen cells? Are you sure you didn't get the queen?)
- After ensuring that bees have queen cells, then be patient and wait for about 30 days +/- . By then, if the queen successfully returned from her mating flight(s) you will likely see capped brood.

- **Time to set up your bait hives!**

Review Tom Seeley's book, **Honeybee Democracy**, for complete details on what his research has shown that swarms prefer in a nesting cavity. No time to read? Local beekeepers report success with the following set up:

1. Deep hive box
2. A couple of frames with empty built out combs (if you have them) in the center surrounded by empty frames with starter strips (or just empty space – but you'll need to add frames soon after they move in or else they will start building from the top of the box).
3. Entrance reducer set to medium
4. Box above the ground 2-3' (higher if you are able)
5. Optional: Spray lemon grass tea (boil lemon grass until you make a dark tea) or other substances mimicking queen pheromones on the top of the frames and entrance of the hive.
6. Wait to observe scouts!

## Beekeeping Classes

Bonnie Bee & Company beginning and intermediate class series.

### **Backyard Beekeeping** (4 hours, \$39)

*This is the condensed version of our Beginner Beekeeping class series and includes information on considerations before you get started, where to place hive(s), equipment options and sources, and how to get bees. Also, basic information on cycles of colonies and what you will need to be doing with your hive at different times of the year.*

Saturday, March 8<sup>th</sup>, 10am – 2pm

Fairfax Women's Club, 46 Park Rd, Fairfax

Additional information and registration available through [Sustainable Fairfax](#)

City Bees

### **Master Classes Workshops**

\$20 fee per class, \$15 current local bee organization members, \$10 limited income. 6:30-9:00PM.

These Master Class Workshops:

- Provide the foundation to move your beekeeping practices comprehensively to the next level;
- Convey critical awareness about the obvious clues and timing for each seasonal next step;
- Share insight into the rhythmic patterns unique to San Francisco and the Bay Area.
- Will be especially meaningful to those who have had hives for several years but need to know what's next, and will provide a full spectrum of valuable insight for new and recent beekeepers. These synergistic classes weave together core knowledge of hive management with a bird's eye view of the entire year, and how timing is critical at each phase for overall hive success and prosperity.

March - (date/location to be announced)

#### **DELIVERING SPRING'S PROSPERITY BOOM**

- Spring Expansion: colony start-up choices, making splits, drawing comb - choices and production methods, simple queen rearing, swarm controls, hive stack management, IPM-drone trapping, timing and overall strategies for reduced hive losses.

April - (date/location to be announced)

#### **HANDLING THE POWERFUL REINS OF 'SPRING INTO SUMMER'**

- Hive stack & comb manipulation, balancing hives,

corrective action, honey flow & harvesting, wax management, honey options - storage and bottling choices.

May - (date/location to be announced)

#### **LATE SUMMER - ANTICIPATE DEARTH, RUN AROUND DEATH, AND WHISTLE PAST TROUBLE**

- Mite monitoring schema, Integrated Pest Management (IPM) techniques, organic mite control methods. Viruses, bacterial disease impact, and parasite vectored diseases - FoulBrood & Nosema Ceranae, tests for Hygienic Bee Behavior, Mite resistance, Phorid Fly Parasitism. Dearth Impact, Record Keeping.

August - (date/location to be announced)

#### **MAINTAINING HIVE HEALTH THROUGH THE ANNUAL CYCLE, PLUS FOUNDATIONAL WORK FOR NEXT SPRING'S SUCCESS**

- Fall nectar flow patterns, seasonal population decline, protein feed health essentials, preparation for winter & hive shutdown, working hives through winter.

For further information - 415-722-7640,

[robert@citybees.com](mailto:robert@citybees.com), or

<http://citybees.com/classes.htm>

## Marin Broodless / Survivor Stock Study Update

### Broodless Study Fundraiser: Sugar Roll Mite Testing Kits for Sale

To help offset the out of pocket expenses associated with the 2014 Marin Broodless / Survivor Stock Study, Bonnie Bee & Company is selling Sugar Roll Mite Testing Kits.

Each kit includes everything you need to determine the mite infestation % of your colony:

- 1) Testing instructions
- 2) Plastic box – to hold all the testing kit components and also for shaking bees into to collect a ½ cup sample
- 3) Container with mesh top
- 4) ½ cup measuring cup
- 5) 1 tbsp measuring spoon
- 6) Plastic container with powdered sugar
- 7) Plastic plate
- 8) Towel

Each kit costs \$45 + tax. Kits will be available at the April Marin Beekeepers Meeting (Thursday, April 3<sup>rd</sup>). Email Gary to place your order: [gpmorse@comcast.net](mailto:gpmorse@comcast.net) All proceeds will directly benefit the study.

Not interested in a testing kit, but want to contribute to the study? You can [make a tax deductible contribution through SuperOrganism](#).

Just what is the study? It is an attempt to try to understand why we are seeing broodless periods during unanticipated times – particularly when pollen is available.

Splits will be taken off colonies that have been collected over the past two years that have gone through broodless periods (when food available). These splits will be taken to the Romberg Center. Data is to be collected on a regular basis (at 2-4 week intervals, depending on time of year) and will include: 24 hour mite counts on monitoring boards (every visit), sugar rolls for mite counts (alternate visits, when temperatures allow), hive weights, cluster size,

and more.

Ideally, we will be able to observe broodless periods and collect information on how they affect mite %'s as well as length of time for these cycles. In the absence of these periods, there is still much to learn from the data to be collected over 12 months from untreated colonies.



Assembling Equipment for the Broodless Study

Thanks to Richard & Karen Hyde, Toby Salz and Rob Tysinger for their assistance in assembling and painting all the equipment.