

# THE MARIN BEEK NEWS

Volume 11, Issue 5

May 2019

## What You Missed

Our last meeting featured a talk by [Rachael Bonoan](#), Post-doctoral researcher, Tufts University and Washington State University. Her talk was titled "Why Bees Like Dirty Water".

Dr. Bonoan is a scientist but also keeps bees and is an ecologist. She started studying bees via ecology/nutritional ecology. Nutritional ecology is the branch of ecology that focuses on an organism's nutritional requirements, foraging, etc. Bees have a nutritional ecology center (the hive) that makes them easy to study.

Different stages require different nutrition. Larvae require protein, while adult bees require more carbohydrates.

Known seasonal hive dynamics:

- Spring – build up
- Summer – build up lots of forage
- Fall – forage wanes and the hive shrinks
- Winter – little to no forage

Nutritional resources:

- Pollen
  - Proteins
  - Lipids
  - Trace minerals
- Nectar
  - Carbohydrates
  - Trace minerals
- Water
  - Trace minerals

Seasonally restrained – depends on what flowers are blooming  
Nutrition can be spatially constrained – large areas of monocrops

Dr. Bonoan found only one research paper on the

## What's the Buzz?

Our next meeting will be on Thursday May 2, 2019 at the American Legion Log Cabin, 20 Veterans Place, San Anselmo, CA. starting at 7:30 pm. The meeting will feature Dr. [Mark Winston](#), Professor and Senior Fellow, Morris J. Wosk Centre for Dialogue

### Upcoming Meetings:

**June 6, 2019**

[Tom Seeley](#), Department of Neurobiology and Behavior, Cornell University, "Darwinian Beekeeping"

### July

No meeting – Marin County Fair  
(See Page 5 for more information about the fair)

**August - TBA**

Annual Marin Beekeepers potluck

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subject, from the 1940s.

The paper found that cow dung distillate was very attractive to bees. More often than not bees like dirty water. Is it because of the scent, or possibly trace nutrients?

Dirty water as a supplement – lots of insects are attracted to it. Is it mainly for sodium?

Hypothesis:

Honey bees selectively forage in soil and water for minerals that their main floral diet may lack.

Prediction:

Honey bees will show mineral preferences when foraging for water.

Set out an array of samples of water with different minerals for the bees to forage.

NaCl, KCl, CaCl, MgCl,  $\text{NH}_4\text{Cl}$ ,  $\text{KH}_2\text{PO}_4$

Trials went on from summer to fall, 8 hours a day.

We don't know how bees taste things. They have very few taste receptors but found that they were able to recognize many things by taste. She found that bees love sodium. Most plants are low in sodium. The bees weren't as attracted to salts that are naturally found in pollens.

She also found that:

- In the summer, bees avoid calcium, magnesium, and potassium.
- In the fall they add these elements to the sodium collection.
  - This correlates with the availability of these minerals in pollen during the year.
- Mineral preferences will differ with the distribution and abundance of floral resources.
  - This was found to be typically true, but not for all minerals. Maybe bees need different amount of these mineral during the year.
- Minerals in pollen sometimes complement water preferences.
- Mineral content of adult bees will be constant over time.
  - She assumed that bees have a constant mineral content throughout the year but they collected bees through the year to analyze

their mineral content and found that bees do not have a constant mineral content.

- Calcium stayed relatively constant until late October. By late October you have 100% winter bees. Theory is that winter bees have very different needs from summer bees. Calcium is used for muscle movement. Winter bees use muscle movement to generate heat.

Honey bee nutrition is important since we rely on honey bees to pollinate so many crops that we consume.

Implication of studying nutritional ecology and health in honey bees:

- Inexpensive diet supplements for hive subject to monocultures.
- Season specific diet supplements for manage honey bee hive.
- Better practices for pollinators overall, not just honey bees.

What can we do now?

- Give them a supplemental mineral source.
  - You can buy salt blocks from your feed store. Blocks can have different minerals in the block. Watch out for pesticides in blocks.
- Give them diverse floral sources throughout the year.
- BeeSmart website will give you a list of plant to plant for a pollinator garden – specific to your area.
- Support local beekeepers, farmers, non-profits.

Dr Bonoan suggested that a good source of information is the "Kids and Bees Handbook" by Sarah Red-Laird. It is downloadable at:

<https://www.beegirl.org/>

## Beekeeping Classes

**Classes with Bonnie Morse:**

**Field Workshop: Beekeeping Basics** (Sat., May 11, 9:30am – 12:30pm, \$65)

You have your bees, now what?? Learn tips and techniques for using smoker, bee brush and hive tool. We will look into how to work your frames and what to

be looking for to determine health of your queen and the colony as a whole. As urban beekeepers, it is important to prevent swarming (to the best of our ability), so you'll learn what causes swarming, how to prevent, and how to recognize early warnings that a colony is making preparations to swarm. You'll also get to see what a laying worker colony looks like (we inevitably have a few from queens who didn't successfully return from mating during our nuc production) and techniques for making it queenright.

Location: TBD (Marin)

Limited to 20 people.

[Register through The Fairfax Backyard Farmer.](#)

**Field Workshop: Intermediate Beekeeping** (Sat., May 11, 1:30pm – 4:30pm, \$65)

An overwintered colony requires different spring management than a new colony. Some of the topics covered will include space management in the hive, queen issues (when you might need to replace and how you do that), and splitting a hive (for colony increase, swarm prevention, or as a method of varroa control).

Location: TBD (Marin)

Register through [The Fairfax Backyard Farmer.](#)

### Classes with Michael Thiele:

#### **Biodynamic Apiculture in the Anthropocene**

Green Gulch Farm Honeybee Sanctuary, CA

**May 18, 2019; 9am – 4pm**

The Anthropocene and the accelerating extinction of life on earth are a wake-up call for a fundamental shift of being on earth. It is also an opportunity for innovative initiatives in the apicultural world and for the creation of 'symbiotic narratives' that not only place the very basic needs of honeybees at the center of our concern but also bring to light the bio-dynamic plasticity and life-giving gestures of honeybees as a keystone species and cultural innovator. In this context, the vision of rewilding of honeybees leads to the rehabilitation of natural and complex biotic systems and also re-calibrates our capacities of perception and cultural identity as human beings. Michael will share current rewilding projects and introduce the vision of LocApiary as a multidisciplinary approach to apiculture and apian health.

Come join us to learn and explore innovative beekeeping strategies and experience the arboreal, bee-centric landscape-apiary at the Green Gulch Farm Honeybee Sanctuary. Open for all levels of beekeeping and bee lovers.

More info at <https://www.apisarborea.com/events/>

## Hive Tips

By Bonnie Morse, [Bonnie Bee & Company](#)

**To repeat last month's tip: Strong hives 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 a lot of honey between it and brood area, you will not prevent brood area congestion – which is the cause of swarming.

- o **Are they already making preparations to swarm...**i.e. swarm cells? You won't stop swarming by adding more space. You can take a split with the queen – and without any frames with queen cells – to (likely\*) stop them from swarming. This is basically a swarm (except they will get some comb and perhaps some food). By removing the queen and part of the colony, you have done what they were already planning to do. Now, leave the original colony (with queen cells) alone for at least 3 weeks to do what they were already planning to do – get a new queen to replace the one that left in the "swarm".

\* **"likely"**... if they are left with too many bees, they could still have a secondary swarm.

- o My bees swarmed – now what?? Well, not soon after the swarm leaves, multiple queens may be emerging. It's a "Game of Thrones" situation in there with virgins vying for right to lead the colony. And after all that fighting, they'll still need to go on mating flights. Best you can do is be patient. Put it on your calendar to check them again in three weeks. By then, you should evidence of a mated queen, if not the queen herself. No evidence? Give them another frame of brood so they can try again.

Drone laying queens vs laying workers:

- o Chances are, a new queen (whether due to supercedure or swarming) will successfully return from her mating flights, there are a percentage that do not.
- o How do you determine whether it's a drone laying queen or laying worker?
  - A drone laying queen will tend to have a regular brood pattern (tight, centered in the hive) and single eggs in the center of cells. To correct:
    - Find the drone laying queen and then

See Hive Tips continued on Page 4

introducing a frame of brood with eggs/  
young larvae so they can make a new  
queen, OR,

- combine (preferably with newspaper method to slow the combination of the two colonies) with a queenright colony
- In either case – it is imperative that you find and remove (aka kill) the drone laying queen. If not, they will either not make a queen, or if you combine with a queenright colony, the queens will fight and the queen capable of laying fertilized eggs might not win the battle.
- Laying workers will tend to have more of an irregular brood pattern and you will find multiple eggs – not centered – in cells. To correct:
  - Combine with stronger queenright hive and newspaper method.
  - Shake / brush all bees out 20+ yards from the hive. Return hive / frames to original location. Foragers will return. Laying workers – who have not been outside the hive – will not. Introduce a frame of brood and now bees will create a new queen.
- **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.
- **If you haven't done so already, it's time to set up your bait hives!**
  - If you plan to set out bait hives this year, now is a good time to do so. (We've already had

one move in this season.)

- 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!



Installing a Bait Hive

## Did You Know?

The club has four extractors. The two six frame extractors will fit in most SUVs and some cars. The twelve frame extractor will also fit in station wagons and SUVs, the largest may need a truck to transport.

Dave Peterson manages a six frame and a twelve frame extractor.

He is located in Ross. His contact info is Dave Peterson [dpeterson307@aol.com](mailto:dpeterson307@aol.com)

Nary and Neil Nordquist manage a 20 frame extractor. They are located in Novato. Their contact info is Neil Nordquist [neilmary@verizon.net](mailto:neilmary@verizon.net)

Rob Tysinger manages the other six frame extractor. He is also in Novato, contact info is Rob [rob@tysingerengineers.us](mailto:rob@tysingerengineers.us)

Each extractor comes with a cappings tub, honey bucket with gate valve, straining screens, uncapping knife, everything you need to extract.

To reserve an extractor, contact one of the people listed above to see if the extractor they manage is available when you want it. Dave Peterson also usually holds an extraction party at his house in Ross sometime in September, where the equipment is set up for the weekend and you can reserve a time to extract your honey. If you only have a few frames and can wait until then that may be the way to go.

Some time back, the Nuc spent a good deal of time and effort to develop the Buzz Protocol, in an effort to keep things interesting and civil on our main List Server, the Buzz. A Protocol was also established for the Swarm List Server to establish some rules of the road and fairness for those wanting to collect swarms and do extraction.

We have recently added both of these "Rules of the Road" on the Club's Website: [marinbeekeepers.org](http://marinbeekeepers.org) under Club Resources. Under this same Tab, you can find:

- Lists of all our past and future Speakers
- All the past Newsletters - A great resource to review the Meeting Topics in the monthly "What You Missed" article.
- Any upcoming Workshops
- Information about our Library,
- What is the Nuc and who's in it.
- A place to sign up for the Annual Pot Luck Party.

## County Fair Time



The 2019 Marin County Fair is fast approaching. Entry forms and category descriptions, as well as this year's entertainment schedule are posted online:

<https://www.marinfair.org/2019/concerts>

If you entered last year you should have received an entry package. If not, or if you are entering for the first time, you can view the 10 category descriptions for the Adult Honey Department on the Fair website, under Competitive Exhibits:

<https://www.marinfair.org/-/media/files/fair/2019/exhibits/food-and-beverage/honey.pdf?la=en>

Entry forms are available at:

<https://www.marinfair.org/-/media/files/fair/2019/exhibits/entry-information/entry-form.pdf?la=en>

And remember that you can now enter online. Enter as many categories as you would like. You must enter to win!

You might also be interested in another category that showcases honey, Winemaking, Division 15, Mead Wines.

Important dates:

Entry forms by **May 16**, online **June 3**  
Entries received **Friday, June 7, 3 pm to 7 pm & Saturday, June 8, 10 am to 5 pm, at the Exhibit Hall.**

Judging will be the following day on Sunday June 9.

The actual Fair dates this year are **Wednesday July 3 to Sunday July 7.**

Dan will be posting a fair schedule on the Buzz and will have it at the meetings. As in the past, we'll need two volunteers to answer bee questions for a few hours during each time period. This is a great opportunity for us to do some PR for the bees, for the club to get some exposure with the public, and for you to have fun talking about bees. All the exhibits entered will be on display as well as an observation hive for you to practice finding the queen. You'll get a free admission the fair and can spend the rest of the day looking at everything else that the fair has to offer and enjoying the entertainment, which is all part of entry.

Please note the dates and plan on participating in the fun.



## **Need Equipment in a Hurry?**

If you find your growing colony – or recently acquired swarm – or split made to prevent a swarm – is in need of equipment ASAP, we have a source in Marin county for bee equipment! The Fairfax Backyard Farmer. 135 Bolinas Rd, Fairfax, CA. [415-342-5092](tel:415-342-5092) Open Wed – Friday, 11am - 6pm, Sat noon – 6pm, Sun noon to 5pm.