

THE MARIN BEEK NEWS

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March 2016

What's the Buzz?

Our next meeting will be on Thursday March 3, 2016 at the American Legion Log Cabin, 20 Veterans Place, San Anselmo, CA. starting at 7:30 pm. The meeting will feature a talk by Greg Hunt, PhD, Professor of Entomology, Purdue University. Dr. Hunt studies the grooming traits of bees. He also works with a multi-state consortium of survivor stock to breed the grooming trait into honey bees. He will be discussing "Breeding Bees for Behaviour Resistance to Varroa".

Upcoming Meetings:

April 7, 2016

Dewey Caron, PhD, professor emeritus, Department of Entomology and Wildlife Ecology, University of Delaware. He is the author of "Honey Bee Biology and Beekeeping". He now spends time living in both Oregon and Bolivia. He will share his hands-on expertise on the Africanized honey bee.

May 5, 2016

Yves Le Conte, Research Director at the Institut National de la Recherche Agronomique. After French apiaries were devastated by varroa mites in 1982, Le Conte investigated the few surviving apiaries and was able to identify traits in

See What's the Buzz on Page 2

What You Missed

Our February meeting featured a presentation by Dave Tarpy, PhD, Department of Entomology, North Carolina State University. Dr. Tarpy is a popular professor at NCSU and a respected researcher. Dr. Tarpy's talk was titled "One Scientist's Journey from Basic Science to Practical Beekeeping Application."

Understanding the biology of bees allows you to understand fundamental processes of the bees' environment.

Genetics

Queens mate with multiple drones. A fertilized egg contains the genetics of the queen plus one of the drones that she has mated with. This creates sub-families in the hive. There are super-sisters, which have $\frac{3}{4}$ of their genes in common and half-sisters, which have only $\frac{1}{4}$ of their genes in common. As genetic diversity increases (by mating with a larger number of drones), the amount of genes in common decreases (there are fewer super-sisters).

Dr. Tarpy conducted an experiment testing genetic diversity. He artificially inseminated a group of queens. Half were inseminated with the sperm of only one drone. The other half were inseminated with the semen of approximately 24 drones. The mated queens were placed in hives in the field. They were allowed to develop until all of the bees in the hives were the progeny of the introduced queens. The hives were then inoculated with American Foul Brood.

The hives with the single drone queens either didn't get the infection or got it really badly. The genetically diverse hives were more robust. Multiple mating is nature hedging its bets (the chance of all workers being susceptible to a disease is lower as the number of matings goes up).

Queens used to last two to three years. Now they are barely expected to last a year.

See What You Missed on Page 2

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- 1 What's the Buzz
 - 1 What you Missed
 - 2 Beekeeping Classes
 - 3 Farm Day
 - 3 Michael Bush Workshop
 - 4 Hive Tips
 - 4 From the Librarian's Desk

How well mated are commercially available queens?
What makes a good queen?

Dr. Tarpy's group purchased a number of queens from various queen breeders. They were measured for different traits:

- Physical Quality
 - Body Size
 - They found that there was a lot of variation in body size.
 - Parasitism
 - They measured the presence of various viruses.
- Insemination Quality
 - Stored Sperm Count
 - Counted how much sperm was stored.
 - Sperm Viability
 - They also counted how much of the sperm was alive.
- Mating Frequency
 - Tested the offspring to determine the number of different drones, basically a paternity test.

They then compared their study with previous studies of queens. They found that today's queens are as good, if not better, than queens from previous studies.

Queens and workers are genetically the same; it all depends on initial diet. Queen quality depends on age of larvae at the start of queen rearing; the older the larvae grafted the poorer the quality of the queen. The quality of the queen was found to affect the quality of the colony. Good quality queens produced colonies that reared more brood, were better at food collection, etc.

Dr. Tarpy found that he could collapse all the variables down to a single quantity. Since he is a professor, he chose a letter grade. He currently gives commercial queens a B+.

Dr. Tarpy closed with two case studies using his grading system:

Case Study #1

Beekeeper with only 50% acceptance rate of queens purchased from a commercial breeder.

The queens were found to be well-mated with a grade of B.

Case Study #2

Queen producer instrumentally inseminated his queens.

There was a high genetic mix but a low viable sperm count with a letter grade of B.

those bees that allowed them to rid their colonies of the mites.

June 2, 2016

Bonnie Morse, co-owner Bonnie Bee & Company. She will be discussing results from the broodless study.

July 2016

County Fair

Beekeeping Classes

Upcoming Classes

Mark your calendar for other 2016 classes and workshops (additional information available at: www.bonniebeecompany.com).

Field workshop: Beekeeping Basics (using your tools, inspection basics, swarm prevention), Sat., May 14, 9:30am – 12:30pm

Field workshop: Intermediate Beekeeping (splitting hives, queen issues, space management), Sat. May 14, 1:30pm – 4:30pm

Summer and Fall Hive Management class series,
Class room sessions: Wed. 7/6 – 7/20, 6:30pm – 8:30pm, San Rafael Community Center, Field Day: Sat. 8/6, 9:30am – 12:30pm, location TBD

Farm Day

A few more volunteers are still needed for Farm Day.

Volunteers will point out the various components and activities going on inside the observation hive, as well as worker bees, drones and everyone's favorite, finding the Queen! The volunteers will also guide visitors through the rest of our exhibit will include an empty hive, beekeepers' equipment, educational posters and flashcards on honeybee vs. yellow jacket id and handouts about ways to help bees.

Farm Day is a free fun event without the traffic and parking congestion of the county fair. It is a great way to connect with kids, their parents and teachers and be advocates for our honey bees.

If you know anyone who is interested in honey bees and would like to get a closer look, this is a great opportunity. Farm Day is open to the public and is free.

If you are interested in volunteering, please contact Steve Lamb at stlamb1@gmail.com

Date: March 17, 2016

Time 9:00 am to 12 noon

Place: Marin County Fair Exhibition Hall

There is more information about Farm Day at:

http://cemar.ucanr.edu/Programs/4-H_Program/Farm_Day_98/Farm_Day



Looking for the Queen at Farm Day

Michael Bush Workshop

A day with Michael Bush
March 20, 2016

2 Lecture series \$35 each + Event Bright Fee (\$45 ea at the door)

Benett Valley Grange

4145 Grange Rd, Santa Rosa, CA 95404

Link: <https://www.eventbrite.com/e/a-day-with-michael-bush-beekeeping-expert-and-author-sunday-march-20th-hosted-by-scba-tickets-22113426855>

Michael Bush is one of the leading proponents of treatment-free beekeeping. He has been keeping bees since the mid 70's, usually from two to seven hives up until the year 2000. Varroa forced more experimentation, which required more hives, and the number has grown steadily over the years from then. By 2008 it was about 200 hives. He has a web site on beekeeping at www.bushfarms.com/bees.htm

Morning Session 9:30 - 12:30

Simple steps to healthier bees, practical advice on how to keep bees sustainably and treatment free, touching on the importance of breeding local survivor stock and management tips to achieve these goals.

Lunch 12:30-1:30

If you are staying for both sessions bring a bagged lunch. If all goes well, we might have a couple observation hives to observe.

Afternoon Session 1:30 - 4:30

Let's talk queens, the queen rearing concept and why we should raise them and simple queen rearing techniques. Whole Bee Concept on how to pick genetics

PS These are 3 hour lectures, if you need your own special comfy chair or pillows feel free to bring them. Coffee/Tea and simple snacks will be provided.

Sponsored by the Sonoma County Beekeepers.

Hive Tips

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

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 you have frames with comb built out, it might be best to add those at this time of year as temperatures are not ideal for comb building.

Bees not quite ready for more space above? But you are concerned about swarm prevention? Add space **BELOW**. A super below your other hive bodies will give queen potential space to expand into and also give space to returning foragers.

Adding extra space to a weaker colony will just make it that much harder for them to keep the brood cluster at the right temperature. How can you tell? One indication will be if the foragers are leaving the hive early in the morning. If the foragers can leave during colder times of the day, then it may be an indication that they have enough workers to maintain the brood cluster temperature and still have workers to spare for foraging.

Considering splitting? It seems a little early right now. 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.

Very few drones seem to be flying now, but most colonies seem to have some drone brood. It may be a few cells worth, or may be a frame, but either way, it seems we have a little time until queen mating will be optimal.

Strong hives may be building quickly.

Swarm 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? We've had success with the following set up:

It is time to start thinking about setting up your bait hives. Not sure how?

1. Deep hive box(10 frames is approximate size that Seeley's research indicated bees prefer, though here in Marin 5 frame deep boxes seem rather attractive to them as well)

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 opening.

4. Box above the ground 2-3' (higher if you are able)

5. Wait to observe scouts! And if you're lucky, get a move in.



Setting up a Swarm Bait Hive

From the Librarian's Desk

Our latest addition to the library is *The Bee-Friendly Garden* by Kate Frey & Gretchen LeBuhn. It is full of wonderful photos and great information to help you create a yard that will support pollinators in various climate zones.

Remember to bring back the items you have borrowed to earn your chance at winning a fabulous prize!

cheers - see you Thursday!