

# THE MARIN BEEK NEWS

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## What You Missed

Our last meeting featured a talk by Michael Burgett, PhD, Professor Emeritus, Extension Beekeeping, Department of Entomology, Oregon State University.

For Dr. Burgett it was a Marin County Homecoming. He was drafted into the army and was stationed at Fort Baker where he got his start in entomology. He studied house flies and cockroaches at the 6<sup>th</sup> Army medical Lab.

Dr. Burgett's talk was titled "Honey Bee Pathology: Why Bees Get Sick". Bee disease is a vast topical area. There are entire books written on adult bee diseases. Mike suggested one of the better books written about bee diseases is "Honey Bee Pests, Predators, Diseases, 3<sup>rd</sup> edition", edited by Roger Morse and Kim Flottom. If you are serious about bees you should have this book.

What dominates bee pathology today?

Parasites:

- Varroa destructor – Currently the most widespread and damaging parasite of the European honey bee. They were first found in the United States in the mid 1980's.
- Tropicalaelaps - A far more virulent mite that can kill a hive before varroa can get established. Fortunately this mite has not yet been introduced to the United States.
- Tracheal mites – These internal parasites were also discovered in the US in the mid 1980's.

Varroa mites absolutely dominate the worlds of practical beekeeping and research. No effective mite control = dead bees.

- What were the major pre-mite problems (before 1986)?
- Swarming
- Starvation – killed more bees, pre-varroa, than any

See What You Missed on Page 2

## What's the Buzz

Our next meeting will be on Thursday October 2, 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 Jennifer A. Berry, Research Coordinator and lab manager for the University of Georgia Honey Bee program.

Her investigations have centered on bee health, particularly the sub-lethal effects of pesticides and IPM management techniques. Her multiple-season study on the effect of small cell foundation on mite reproduction caused a stir: she found that it did not provide benefit.

The title of her talk will be "The Effects of Modern Beekeeping Practices"

### Upcoming Meetings:

**November 6, 2014**

Marin County Beekeeper: Gadgets and Gizmos (back by popular demand!  
Email Bonnie: [bonnie@bonniebmorse10@gmail.com](mailto:bonnie@bonniebmorse10@gmail.com) if you have something to share).

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other cause.

- Foulbroods – In 1906 E. F. Phillips discovered that there were two distinct foulbrood diseases.
- American Foulbrood (Bacillus larvae):
  - Forms spores, which can be viable for decades.
  - Rod shaped bacterium.
  - In the adult bee's gut it goes into a vegetative state.
  - It is transmitted to young larvae by nurse bees. The spores germinate in one day and the bacteria multiply, penetrating the gut wall. The larvae die from the septicemic condition.
- Field Symptomology
  - Punctured caps – probably AFB but not guaranteed.
  - Scattered brood – probably AFB but not guaranteed.
  - Pupal "Tongue" – the dead pupae's threadlike proboscis protrudes from the pupal head and extends across the cell.
  - Sunken caps
  - Scale – This is one of the worst problems as the bees try to remove the scale contaminating themselves in the process and spreading the disease.

The quickest test for AFB is to stick a toothpick in a sunken cell and swirl it around. Pull the toothpick out. It will be ropery and will pull out about an inch before snapping back.

Dogs have been trained to detect AFB in yards.

- How is AFB spread?
  - Robbing / drifting.
  - Feeding of contaminated honey and/or pollen.
  - Exchange of combs.
- I have it, now what?
  - Burn it – no ifs, no ands, and no buts.
  - Don't save anything. Burn it all!
  - This is not a legal requirement in many states, but it is what you should do.
  - Antibiotics only kill the vegetative state, which will mask the symptoms, but the spores remain viable.
  - Paraffin dipping of infected equipment is not effective. It only coats the spores.
- How do I prevent getting it in the first place?
  - Use good management practices.
    - Isolation – get your honey producing

colonies as far away from other beekeepers as possible. You have no idea how good your beekeeping neighbors are. Don't trust them.

- A minimum distance from other apiaries should ideally be two miles.
- Sedentation – don't move them. You could be moving them into an AFB area.
- Sanitation – remove all hive scrapings and discard them in the garbage.
- Avoid co-mingling – don't bring other bees to your apiary
- Use extreme caution regarding used equipment. Buying used equipment is not worth the risk.

Prophylactic use of antibiotics is problematic at best. There is the risk that AFB will develop resistance. Also, the use of antibiotics tends to mask the disease.

Several methods of controlling AFB have been studied including, genetics (selective breeding), antibiotics, and fumigation of equipment. None have proved to be effective.

- European Foulbrood (Melissococcus pluton):
  - Worldwide distribution.
  - The larvae die in the "C" stage, which the bees then clean out.
  - Symptoms include spotty, discolored uncapped brood.
  - Dr. Burgett states that he does nothing; colonies will grow out of it. He considers it a "Stress Disease".
  - Does not kill colonies like AFB so it doesn't get the attention or research interest.
- An overall defense:  
Requeening – commercial beekeepers will requeen once or twice per year every year.

Dr. Burgett closed with his philosophy of beekeeping.

- Never buy a commercial queen. Obtain queens from feral or local sources.
- Feed No chemicals – no antibiotics, no mite controls
- Make splits from hives that have survived over two winters
  - On average, his hive losses have been 50% every winter but in the last several years the survival rate has gotten better.
- The caveat – Dr. Burgett feels this approach would not work at the commercial level but is appropriate for small-scale (5 – 10 colonies) beekeepers.

**December 4, 2014**

Robbin Thorpe, Professor Emeritus of Entomology, Harry H Laidlaw Jr. Honey Bee Research Facility, University of California, Davis.

**January 8, 2015**

Tom Seely, Professor and Chairman in the Department of Neurobiology and Behavior at Cornell University, Ithaca, NY.

**February 5, 2015**

Jay Evans, researcher at the USDA lab in Beltsville, Maryland. His work has spanned a wide range of topics including genome characterization of varroa mites and managing diseases and pests of honey bees.

**March 5, 2015**

Christina Grozinger, Professor of Entomology and Director, Center for Pollinator Research Penn State University.

**April 2, 2015**

Elina Nino, Extension Apiculturist, University of California, Davis.

**May 7, 2015**

Dr. Marla Spivak, Distinguished Knight University Professor at the University of Minnesota.

**June 4, 2015**

Mark Winston, Academic Director and Fellow of the Centre for Dialogue, Simon Fraser University, Vancouver, BC. Mark is recognized as one of the world's leading experts on bees and pollination.

**July**

No meeting (Marin County Fair)

## Beekeeping Classes

### Bonnie Bee & Co. Fall and Winter Classes

Class room sessions at the San Rafael Community Center, 618 B St., San Rafael, 6:30pm - 8:30pm  
Additional information and registration in the 'Youth and Adult' classes through [San Rafael Community Center](#)

**Beginning Beekeeping class series** (9 hours, \$99, course code 22399)

Classroom sessions will include basic bee information, seasonal cycles of a colony, equipment options, where to place your hive, how to get bees and tips on working with your equipment. When the weather warms up, there will be a field session so you can observe and practice working with your tools and bees.

Class room sessions: Wed., Jan. 21<sup>st</sup> – Wed. Feb 4<sup>th</sup>  
(3 classes)

Field Day: Sat., Mar. 14<sup>th</sup>, 9:30am – 12:30pm

**Intermediate Beekeeping class series** (9 hours, \$99, course code 22402)

You've got your colony through winter (or not) - now what? Class sessions will include how to clean up your equipment, expanding hive size for spring, swarm prevention- and if that fails, swarm capture, setting up bait hives for swarms, identification of common pest and diseases and management options for them. Topics will also include dealing with special situations: aggressive hives, queen failures, and laying workers. Field day will include information on how to split a colony, pest and disease ID, and swarm prevention.

Classroom sessions: Wed., Feb 11<sup>th</sup> – Wed. Feb 25<sup>th</sup>  
(3 sessions)

Field Day: Sat., Mar. 14<sup>th</sup>, 1:30pm – 3:30pm

## Hive Tips

**Honey Harvesting.** Time to consider how much honey (if any) you should be removing. General rule of thumb in Marin is for a colony to have 30 lbs of honey stored. One medium frame of honey is about 3 lbs, one deep frame is about 7 lbs. For smaller colonies (like 5 frame nucs), you would want to see approximately 50% brood and 50% food. While an admirable sentiment, leaving too much honey on a hive is not beneficial for the colony. It will give them additional space they will need to heat during winter and may be detrimental.



**Collecting Frames for Honey Harvesting**

### **'Tis the Season for Increasing Varroa Mite Populations**

With fall comes decreasing colony populations and increasing varroa mite populations. This can be a deadly combination for your colonies. The Marin Bee Census survey has shown an average of 47% of colonies lost each year are lost between October – December. This can largely be attributed to losses due to heavy mite loads and the associated diseases they vector.

By regularly monitoring the levels of mite infestations in your colonies, you'll have a better idea if high mite levels are due to your bees' inability to deal with mites in the colony (through hygienic behavior (often observed as uncapped pupae), grooming, broodless periods, etc.) or whether a sudden spike might be due to your colony finding and robbing out a nearby crashing hive.

Information on how to do a sugar roll to determine varroa infestation % is available from the University of Minnesota:

[http://www.extension.org/mediawiki/files/e/e1/VarroaMites\\_155.pdf](http://www.extension.org/mediawiki/files/e/e1/VarroaMites_155.pdf)

There are passionate voices on both sides of the debate on whether to treat or not to treat. There is logical reasoning on the pros and cons on both sides. Keep in mind that your bees' problems could quickly become another hive's problem. And because of the increasing number of beekeepers – and increasing hive density, particularly in some neighborhoods - a moderate approach to consider would be to treat if mite levels go above a certain threshold. If your bees have shown no method of resistance (you should be looking for it every time you inspect), you might consider requeening the colony with more resistant stock when that option next becomes available. If you have been monitoring your bees and they have shown mite resistance, you might consider a treatment as a way to help them reduce the number of introduced mites, but consider giving their queen another chance.



**The Empty Cells Indicate a Level of Hygienic Behavior**

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Visit [www.scientificbeekeeping.com](http://www.scientificbeekeeping.com) for information from Randy Oliver on treatment options and application information. Get as much information as possible on the pros/cons of different approaches before/if you decide to treat for mites.

#### **American Foulbrood:**

Just to keep this on everyone's radar....another case of AFB was found in Marin recently. Suspected source of the infection was old, used equipment.

With so many new beekeepers and increasing hive density, it is imperative that we all continue to keep on the lookout and act quickly.

Because of the highly contagious nature of the disease, if you have a colony perish, it is important to secure the hive in a bee-proof place (like garage) until you can determine the cause of death. Chances are, it will be mite and mite vectored disease related, but you can't risk the chance of it being something worse and having an AFB infected colony get robbed out.

Our bees are all flying pretty far....so we're all in this together. (Like it or not.) Things are dry and beekeepers in some areas are reporting low food stores in colonies....so bees would be very tempted to go in and rob out a dead or dwindling colony and relieve them of their honey stores.

Don't know how to diagnose your dead out? Don't be afraid to ask for help! Post pictures to the Buzz, ask a beekeeping friend to look at your hive, bring a frame or two to a Marin Beekeepers meeting, schedule an appointment to have Bonnie or Gary help inspect your equipment, etc.

As Michael Burgett discussed at the last Marin Beekeepers Assn. meeting, if you do discover your hive has been infected, you need to burn it. (The Marin Beekeepers Assn. are looking for a solution to the burning challenge.) Antibiotics will only effect the vegetative stage. Spores can remain viable for decades.

Get educated. Stay vigilant. Help us keep all our bees healthy!

## Fall Pollinator Plant Sale!



### **Mark your calendar for the fall pollinator / drought tolerant / neonic free plant sale!**

Oct. 18 - 19th, 8am - 6pm, the Marin ACE Hardware store in San Rafael (180 Merrydale Rd....on opposite side of 101 from Civic Center) will be having a plant sale with pollinator friendly, drought tolerant, neonic free plants!

Part of the profits will help support the broodless study currently underway (that already has 6 months of data collected and has plans to extend through 2015).

Invite your friends and neighbors and get them planting more bee forage!

**Volunteers wanted to talk to customers about bees and planting for pollinators. If you're interested in lending a hand, please email Bonnie Morse at: [bonnie@bonniebeecompany.com](mailto:bonnie@bonniebeecompany.com)** We'll have an observation hive and local honey will be on sale.