

# THE MARIN BEEK NEWS

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## What You Missed

Our last meeting featured a talk by Dr. Deborah Delaney. Dr. Delaney is an Assistant Professor at the University of Delaware. Her research includes the genetic characterization of unmanaged bee colonies, [savethehives.com](http://savethehives.com) feral bee project, and evolutionary biology of honey bees.

Dr. Delaney's talk was titled "The sustainability of honey bees: an evolving beekeeping industry". She began by saying that, according to the media, we know what is killing bees. It is no longer a mystery. The culprits are pesticides, particularly neonicotinoids. Several movies have been recently produced including Queen of the Sun, The Vanishing of the Bees, and More than Honey that also claim pesticides as the main culprit for bee loss, but this is not a black and white problem. She went on to state that pollinator loss affects all animals on the planet.

Pollination is an eco-service provided by honey bees and other insects. Other pollinator insects include native bees, certain flies as well as butterflies. It wasn't until the 1700's that the role that insects play in pollinating crops was discovered.

Globally, insect pollination services are valued at \$250 billion annually. It is very important for food security. Insect pollination is an important factor in the pollination of 75% of crops. Insect pollination enables reproduction of 94% of flowering plants. It is the foundation for the promotion of biodiversity. In the United States, crops pollinated by insects are valued at over \$47 billion annually; almost \$15 billion is attributable to honey bees.

What is the problem?

Pest and Pathogens - varroa and the various viruses that they vector.  
Intensified Land Use – the planting of monocrops and the continued reduction of habitat.  
Phenological Issues – such as climate changes.

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## What's the Buzz

Our next meeting will be the Marin Beekeeper's annual potluck dinner on August 9<sup>th</sup> starting at 6 pm at the home of Neil and Mary Nordquist, 2072 Hatch Road, Novato, CA for the annual potluck dinner. Sign up will be online again this year. Go to:

<http://marinbees.org/wp> and click on Club Resources for more information on the event and to sign up to bring a dish. Everyone should bring their own plates, utensils and drinking glasses. This is a **GREEN "ZERO WASTE" EVENT**. All items should be brought in a reusable or recyclable/compostable container. Please plan on taking your recyclables / compostables / garbage with when you *leave the event*.

Directions to Neil and Mary Nordquist, 2072 Hatch Road, Novato:

Take the San Marin Drive/ Atherton Avenue exit from US101. Turn west onto San Marin Drive.

Continue on San Marin Drive to Simmons Lane, the first stop sign. Turn left onto Simmons Lane. Follow until you come to a stop light at a T-junction with

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## The History of Honey Bee Importation into the United States

*Apis mellifera* was first imported into the US in the 1600's. In 1621 *Apis mellifera mellifera*, the German dark bee was listed on a ship manifest. Between 1859 and 1922 seven additional subspecies were imported to the US. These included *Apis mellifera ligustica*, *Apis mellifera carnica*, and *Apis mellifera caucasica*. Today, these three subspecies make up the bulk of the bee genetics in the U.S.

Genetic diversity is an important factor in colony health. Colonies displaying a wide variety of genetics are more able to resist pathogens and are better at foraging and caring for their young.

However, only a relatively small founder population of honey bees has been imported to the U.S. The genetics that were brought to the U.S. only represents a small portion of the original European and African gene pool. Most commercial queen rearing in the U.S. is done using a limited number of queen mothers, further reducing the genetic diversity. Every year the diversity of the managed bee population is reduced.

Studies of feral honey bee colonies from 1980 to 1992 found a much more diverse genetic makeup when compared to the managed honey bee colonies. However, the introduction to the U.S. of varroa in 1987 wiped out a large number of feral colonies, 90 to 95% according to California studies.

Dr. Delaney wanted to find out if the unique feral genetic identity still exists. In collaboration with Dr. Tom Seely she sampled the feral bees in the Arnot Forest in New York State. They also sampled the colonies in the two managed apiaries that were near the Arnot Forest. They found that the feral bees had a much higher genetic differentiation.

There is some belief that the feral hives that did survive have learned to live with varroa without the intervention of beekeepers or the use of chemical treatments. It is thought that introduction of the feral genetics into the managed population could have beneficial effects.

Dr. Delaney pointed out that there has been some gain in genetic diversity over the last ten years. Sue Cobey and Steve Sheppard at Washington State University have developed techniques to import bee semen from Eurasia in an effort to introduce additional genetic diversity. Several years ago the USDA imported Russian honey bees, which appear to have some resistance to varroa mites.

Varroa mites are still seen to be a primary problem for honey bees. They are an ectoparasitic brood mite that is native to Southeast Asia. Their native host is *Apis cerana*, which has developed a balance with and can tolerate the mites. It is believed that varroa jumped hosts to *Apis mellifera* in the 1960s. Once it established itself with the new host it spread very rapidly across the globe. It is believed that Australia is the only continent that does not have varroa.

*Apis mellifera* was an ideal host for the mite. *Apis mellifera* has a longer brood development cycle than *Apis cerana* so the mites were able to produce more offspring per host. *A. mellifera* also did not have natural hygienic behavior that would help it combat the mite. Unfortunately the mite vectors many bee viruses which can destroy the colony, a less than ideal parasite-host relationship. Often signs of viral infection don't show up until it is too late to save the hive.

Monitoring and treatments are the most common approaches to combatting the varroa mite. However, mites gain resistance to chemical treatments quickly due to their rapid reproductive cycle. Many treatments are temperature sensitive and some have been found to reduce the viability of queens and drones.

An integrated pest management program (IPM) for varroa has been developed that does not rely on chemical treatments. It consists of:

1. The identification and development of hygienic stock.
2. The removal of drone brood, the varroa mites' preferred host within a colony.
3. The use of screened bottom boards.
4. Colony fission (splitting) to interrupt the brood cycle.

Dr. Delaney closed by talking about the Mid-Atlantic Apiculture Research and Extension Consortium (MAAREC). The focus of MAAREC research has been on the identification of alternatives to chemical controls and promotion of less reliance on chemical pesticides for mite control. Included is research of integrated approaches to reduce mite pressure and development of an economic injury level (threshold) for fall mite control within an IPM framework. More information about MAAREC can be found on their website at <http://agdev.anr.udel.edu/maarec/>.

Novato Boulevard. Turn right onto Novato Boulevard and then make a left turn at the next light onto Wilson Avenue. Follow Wilson for approximately 1 1/4 miles.

There will be stop signs at Center and Vineyard Roads on the way. Hatch Rd will be a right turn shortly after Wilson narrows.

The Nordquists are 1/4 mile down Hatch Road on the right. 2072 is on the mailbox just before the gate. Please park on the street and walk in through the gate.

### Upcoming Meetings:

#### September 4, 2014

Michael Burgett, Professor, Extension Beekeeping, Department of Entomology, Oregon State University.

#### October 2, 2014

Jennifer A. Berry, Research Coordinator and Lab Manager for the University of Georgia Honey Bee Program.

#### 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).

#### 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)

## Moving Hives

Many of us have been told that you can't move a hive a short distance (i.e. 50 feet). Our librarian Marina Wright was confronted with just that problem after a neighbor complained about the bees being too close to their yard.

Using a method that Michael Bush describes on his website, <http://www.bushfarms.com/beesmoving.htm>, and with the help of club member Rob Tysinger she successfully moved three hives a distance of about 50 feet without losing the foragers.

The method that he describes only requires one person to move a hive but it was definitely easier with two.



Before



After

# Beekeeping Classes

## 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.

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>

## Biodynamic Beekeeping Workshop

September 7, 2014

“Bees: The Lifeline of the Biosphere” with Michael Thiele [www.gaiabees.com](http://www.gaiabees.com)  
Topics will include: biology, the life forces and natural gestalt of bees, alternative beehive designs, an overview and study of the life-rhythms and cycles throughout the bee year, biodynamic approaches and bee-centered management, along with strategies for health; bees and their (agro)-cultural quality and their pivotal role for life on earth; introduction into apisophia. More info at: <http://www.sfzc.org/ggf/display.asp?catid=3,76,125&pageid=3569>

# Hive Tips

**The flow (nectar and pollen) has slowed** recently. In some areas, colonies that had ample food stores in June have all but depleted their reserves.

The effect this has on a hive will vary considerably based on location and each individual colony. When inspecting your hive(s), be on the lookout for stored pollen (bee bread), nectar, and capped honey. Is it there? Great. Not? Consider feeding. Also, with the increase in popularity of beekeeping, there are simply a lot more bees that need food. Be mindful that feeding can have unintended consequences of attracting ants and/or robbing and mitigate as needed.

If you are feeding sugar syrup, you may want to switch to a 2:1 sugar:water ratio to promote food storage.

Identifying food on your frames:

- 1) GOOD First frame has good ratio of food/brood. Note capped honey in upper corners, then pollen, and capped brood in the center. Second picture has capped honey in upper corners and capped brood in center.



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- 2) **SOME** This frame has some nectar in top corners and a some pollen cells with brood in the center. Lack of capped honey is cause for some concern.



- 3) **HUNGRY BEES** No food on this frame. Bees living wing to mouth. Starvation likely if feeding is not done.



**Has your hive temperament changed for the worse recently?** Common causes of aggression in previously docile hives can include:

- Lack of food. As mentioned above, check for amount of food when checking your colony. Bees without sufficient stores can become more aggressive – and more protective of what little they do have. Feeding can help reduce unwanted behavior.
- Robbing. Either by other bees or yellow jackets, robbing can cause increased aggression. If robbing is a suspected problem, minimize entrance size and/or add a robber

screen to discourage this activity.

- Animal intrusions. Late night visits from skunks and other critters can cause increased bee anxiety. This usually dissipates with the passage of a little time after these visits. Wearing light colors while working your hive (or working near your hive) will help to discourage the bees from mistaking you for a large animal and inciting their ire.
- Queenless. A queenless colony – and one that does not have eggs or larvae to make a new one – can quickly become an irritable colony. If a queenless colony has not yet become a laying worker colony, the issue can often be resolved by giving the bees the resources to make a new queen (e.g. a frame with eggs and young larvae from another colony) or by purchasing a mated queen.

**Late Summer and Fall Hive Management.** It may be still be summer, but the solstice has passed, the days are getting shorter, and bees are starting to get their hives ready for winter. Some changes you may see:

- Queen supercedure. It is not uncommon to see supercedure cells in your colony at this time of year. Let the bees replace their queen, if they feel it is needed. The drone population at this time of year is high, and while you may not know the qualities of the drones your new queen will be mating with, a young queen may help the colony get through the winter and be ready for rapid spring growth.
- Propolis may be more prevalent in your colony. While perhaps an inconvenience (usually minor) to the beekeepers, allowing the bees to utilize propolis as they see fit will provide them with a number of benefits. In addition to the anti-bacterial and anti-fungal properties of propolis which may assist in keeping a hive healthy, bees will use propolis for a variety of reasons including to seal cracks and to minimize entrance opening(s) preventing unwanted access to the hive from ants, yellow jackets, and weather elements.
- Brood cluster size and location may be changing as the brood area in upper portions of the hive are converted to food storage.
- No evidence of eggs, larvae or capped brood? Before jumping to the conclusion that your colony is queenless, check pollen/bee bread stores. If the colony has not been able to bring in enough, then the queen may cease egg laying until food availability again increases.

## Fair News



### *Finding the Queen*

Thank you to everyone who helped make the 2014 Marin County Fair a great success. All the volunteers who tirelessly looked for the queen and answered all the questions, great job, there were lots of compliments from the fair goers and staff.

Thank you to Dave Peterson, Jerry Draper, and Bonnie and Gary Morse for supplying the focal point of the exhibit, the observation hives. And thank you to Sunnyside Nursery for supplying bee friendly plants for display arranged by Wendy Lee, Tim Ezekiel and Tim Crosse.

Start planning your entries for next year, they'll be due in about 6 June 2015, so mark your calendars. Send any suggestions for improvements for next year and additional exhibit categories to Dan Stralka at [Stralka.Daniel@epamail.epa.gov](mailto:Stralka.Daniel@epamail.epa.gov)



As for the Honey Competition, here are the final results. This year was a Gary and Bonnie show, they not only entered most categories but they took home the most awards. Just a little subtle challenge for next year for all of us. You have got to play to win.

## Honey

### **Eucalyptus Blend**

- 1st Bonnie & Gary Morse, San Rafael, CA
- 2nd Roy Crumrine, Tiburon, CA
- 3rd Roy Crumrine, Tiburon, CA

### **Floral**

- 1st Bonnie & Gary Morse, San Rafael, CA
- 2nd Peter Bauer, San Rafael, CA

### **Wild Flower**

- 1st Roy Crumrine, Tiburon, CA
- 2nd The Kosek Family, Mill Valley, CA
- 3rd Richard Hyde, Belvedere, CA

### **Crystallized**

- 1st Jeff Kent, San Rafael, CA
- 2nd Bill Papendick, San Rafael, CA
- 3rd Bonnie & Gary Morse, San Rafael, CA

### **Chunk**

- 1st Bonnie & Gary Morse, San Rafael, CA
- 2nd Daniel Stralka, Mill Valley, CA

### **Comb**

- 1st Daniel Stralka, Mill Valley, CA
- 2nd Bonnie & Gary Morse, San Rafael, CA

## Hive Products

### **Natural Beeswax**

- 1st Bonnie & Gary Morse, San Rafael, CA
- 2nd Bonnie & Gary Morse, San Rafael, CA
- 3rd Bill Papendick, San Rafael, CA

### **Molded Beeswax**

- 1st Bonnie & Gary Morse, San Rafael, CA
- 2nd Bonnie & Gary Morse, San Rafael, CA
- 3rd Daniel Stralka, Mill Valley, CA

### **Hand Dipped Beeswax Candles**

- 1st Daniel Stralka, Mill Valley, CA

### **Full Frame**

- 1st Bill Papendick, San Rafael, CA
- 2nd Rob Tysinger, Novato, CA
- 3rd Bonnie & Gary Morse, San Rafael, CA

## Special Awards

Best of Show – Honey  
Bonnie & Gary Morse, San Rafael, CA

Best of Show – Beeswax  
Bonnie & Gary Morse, San Rafael, CA

Best of Show – Full Frame  
Bill Papendick, San Rafael, CA

Outstanding Honey Entry  
Bonnie & Gary Morse, San Rafael, CA

Salvisberg Award  
Bonnie & Gary Morse, San Rafael, CA