



# The Buzzz

The Monthly Newsletter of the Gilroy Beekeepers Association

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## Apiary Photo of the Month



Since no one sent in a photo this month I will show one of my own.

**Spring Is Near**

**Editors Note:** A big thanks to those of you who have submitted pictures. Keep them coming and I will feature your apiary.

## GBA News

The Gilroy Beekeepers Association is currently negotiating for the purchase of bee packages for 2017. Price and availability date are yet to be determined. Having said that, we need to get an idea of how many packages we should be trying to purchase. Please send Grant Wolfe or Dave Stocks an email indicating the following:

Do you want bee packages?

How many do you want?

Email your reply to Grant or Dave no later than 2/17/2017

Grant's email is [gwolfeman@yahoo.com](mailto:gwolfeman@yahoo.com)

Dave's email is [dave.stocks@yahoo.com](mailto:dave.stocks@yahoo.com)

## President's Message

by Dave Stocks

February was a successful month for the GBA. We had several activities which not only benefitted our members, but also the Association. At the February meeting we had a very successful raffle. This was due to the efforts of Mike Stang. Mike secured donations from Sam's Downtown Feed in San Jose and Westside Nursery and Nursery Beautiful Plants in Gilroy. Their generosity of these businesses is greatly appreciated!

On February 11th, Grant Wolfe hosted one of his now famous bottom board workshops. It was well attended and the folks went home with some really nice bottom boards. On February 25th, Roark Dieters and Mike Stang taught our first Swarm School. It was also well attended.

Looking forward, we have a couple classes planned. On March 18th, we will be teaching a Beginning Beekeeping class. Please pass the word to anyone you know who might be interested. For more information, or to register, you can contact me at [dave.stocks@yahoo.com](mailto:dave.stocks@yahoo.com). On April 8-9, we will be hosting a queen rearing class. The class will be taught by Melanie Kirby and Mark Spitzig of Zia Queen Bees. Mark and Melanie were here about three years ago and put on an excellent class. Stay tuned for more details.

We're making progress with our package order! We still don't have a firm price, but hope to in the next week or so. I apologize for being somewhat vague. Please be patient! We do know that delivery will be somewhere around the middle of April.

Finally, I need to thank all the members of the Gilroy Beekeepers Association who have stepped up to teach classes, give community presentations, and contributed in ways that have made the start to this year very successful. It is greatly appreciated!

# News from the Bee World

Articles courtesy of The W.A.S. , Bee Culture Magazine and ABJ

## Usurpation: when one colony takes over another

In the December 2010 issue of *American Bee Journal*, Dr. Wyatt A. Mangum describes the phenomenon of honey bee usurpation, which is the taking over of a healthy colony by a summer swarm. Mangum not only describes this unusual behavior in great detail, but provides photographs as well.

Until recently, usurpation sightings have been limited to Africanized bees taking over colonies of European honey bees in the southwestern United States. However, Mangum's usurped hives are located in Virginia and the resulting colonies did not show any of the aggressive behaviors typical of Africanized colonies. Instead they were "normal" colonies with average European honey bee traits. According to Mangum, other occurrences of usurped hives have been recorded in nearby areas of Virginia and North Carolina.

### How usurpation works:

A summer swarm invades an established colony.

Fighting between bees is evident.

The queen of the established colony is killed by the invading swarm.

The usurping queen eventually becomes accepted and begins laying eggs. The summer swarm, which under normal circumstances could not survive the winter, overwinters on the stores collected by the usurped colony. It may be more common than we think.

In the first usurpation that Mangum documents, the entire process—from the arrival of the swarm until the invasion was complete—took 18 minutes. If this is typical, the process may be more common than we realize. From the outside, at least, the invaded hive looked no different in the evening than it did the previous morning. On the inside, things were unsettled until the old queen was dead and the new one was accepted—a process which took three days.

Mangum cautions that it is extremely difficult to distinguish between a normal supercedure and a colony usurpation just by looking at the queen, so one should not jump to conclusions. However, the possibility of usurpation casts a different light on the survivability of summer swarms.

Here is a link to video showing an attempted usurpation in progress

[https://www.youtube.com/watch?v=NI\\_LuUpDJc](https://www.youtube.com/watch?v=NI_LuUpDJc),

## Despite Few Taste Genes, Honey Bees Seek Out Essential Nutrients Based on Floral Resources

Despite having few taste genes, honey bees are fine-tuned to know what minerals the colony may lack and proactively seek out nutrients in conjunction with the season when their floral diet varies.

This key finding from a new study led by Tufts University scientists sheds light on limited research on the micronutrient requirements of honey bees, and provides potentially useful insight in support of increased health of the bee population, which has declined rapidly in recent years for a variety of complex reasons.

The research, published in *Ecological Entomology*, suggests that beekeepers should provide opportunities for their bees to access specific nutrients, possibly through a natural mineral lick, to support their balanced health because the bees will search for the minerals when they need them. It is also an opportunity for the general public to support the bee population by planting a diverse range of flowers that bloom throughout the year.

"Currently, there are micronutrient supplements for managed bee hives on the market but there is little research backing up which minerals the bees actually need," said Rachael Bonoan, the lead study author and a Ph.D. candidate in biology in the School of Arts and Sciences at Tufts. "The fact that honey bees switch their mineral preferences based on what is available in their floral diet is really exciting. This means that somehow, honey bees know which nutrients the colony needs. This insight helps us support honey bees and other pollinators by providing access to diverse nutrient sources all year long."

The findings show that honey bees forage for essential minerals that aid their physiological health, even though they have relatively few taste genes. In the fall, when floral resources dwindle, the study showed that bees seek out specific nutrients - calcium, magnesium, and potassium, all commonly found in pollen - by foraging in compound-rich or "dirty" water. When flowers and pollen are abundant in the summer, the bees prefer deionized water and sodium, ultimately suggesting that bees are foraging for minerals in water based on what is lacking in their floral diet.

Bonoan and her research team studied eight honey bee hives that were located about 100 yards from the research area. The bees were trained to come to the research site because researchers placed jars of sugar water at staged intervals until the worker bees became accustomed to the ready food supply.

Researchers set up water vials with different minerals such as sodium, magnesium or phosphorus and catalogued the number of bees that visited each vial. At the end of the day, they also measured how much the bees drank from each vessel to determine which minerals were most in demand.

The researchers also tracked the hive each bee belonged to by dusting worker bees with different colored powders as they left the hives. The team noted which colored bees were drinking from which mineral-laden water source, and later measured the amount of brood to determine whether there is a connection between bee health and specific minerals.

The study results related to hive health were inconclusive. While stronger colonies do tend to visit more minerals than weaker colonies, it was difficult to determine which came first, being a stronger colony or accessing mineral resources. Additional data is necessary to assess colony fitness.

## **Court Revives Lawsuit over government pesticide approval**

A federal appeals court Thursday revived a sweeping lawsuit accusing the U.S. Environmental Protection Agency of endangering scores of protected species by approving toxic pesticides without required consultation with wildlife officials.

[Court revives suit over government pesticide approvals](#)

## **2016 Organic Survey being conducted. If you're organic, get counted.**

The U.S. Department of Agriculture's National Agricultural Statistics Service is conducting the 2016 Certified Organic Survey, a yearly census taken to gather new data...

The post [CATCH THE BUZZ – 2016 Organic Survey being conducted. If you're organic, get counted.](#)

## **Wild Bee Decline Threatens US Crop Production**

The first-ever study to map U.S. wild bees suggests they are disappearing in the country's most important farmlands -- from California's Central Valley to the Midwest's corn belt and the Mississippi River valley.

If wild bee declines continue, it could hurt U.S. crop production and farmers' costs, said Taylor Ricketts, a conservation ecologist at the University of Vermont, at the American Association for the Advancement of Science (AAAS) annual meeting panel, [Plan Bee: Pollinators, Food Production and U.S. Policy](#) on Feb. 19.

"This study provides the first national picture of wild bees and their impacts on pollination," said Ricketts, Director of [UVM's Gund Institute for Ecological Economics](#), noting that each year \$3 billion of the U.S. economy depends on pollination from native pollinators like wild bees.

At AAAS, Ricketts briefed scholars, policy makers, and journalists on how the national bee map, first published in the *Proceedings of the National Academy of Sciences* in late 2015, can help to protect wild bees and pinpoint habitat restoration efforts.

At the event, Ricketts also introduced a new mobile app that he is co-developing to help farmers upgrade their farms to better support wild bees.

"Wild bees are a precious natural resource we should celebrate and protect," said Ricketts, Gund Professor in [UVM's Rubenstein School of Environment and Natural Resources](#). "If managed with care, they can help us continue to produce billions of dollars in agricultural income and a wonderful diversity of nutritious food."

## *TROUBLE ZONES*

The map identifies 139 counties in key agricultural regions of California, the Pacific Northwest, the upper Midwest and Great Plains, west Texas, and Mississippi River valley, which appear to have most worrisome mismatch between falling wild bee supply and rising crop pollination demand.

These counties tend to be places that grow specialty crops -- like almonds, blueberries and apples -- that are highly dependent on pollinators. Or they are counties that grow less dependent crops -- like soybeans, canola and cotton -- in very large quantities.

Of particular concern, some crops most dependent on pollinators -- including pumpkins, watermelons, pears, peaches, plums, apples and blueberries -- appeared to have the strongest pollination mismatch, growing in areas with dropping wild bee supply and increasing in pollination demand.

Globally, more than two-thirds of the most important crops either benefit from or require pollinators, including coffee, cacao, and many fruits and vegetables.

Pesticides, climate change and diseases threaten wild bees -- but their decline may be caused by the conversion of bee habitat into cropland, the study suggests. In 11 key states where the map shows bees in decline, the amount of land tilled to grow corn spiked by 200 percent in five years -- replacing grasslands and pastures that once supported bee populations.

## *RISING DEMAND, FALLING SUPPLY*

Over the last decade, beekeepers facing colony losses have struggled with rising demand for commercial pollination services, pushing up the cost of managed pollinators - and the importance of wild bees.

"Most people can think of one or two types of bee, but there are 4,000 species in the U.S. alone," said Insu Koh, a UVM postdoctoral researcher who co-hosted the AAAS panel and led the study.

"When sufficient habitat exists, wild bees are already contributing the majority of pollination for some crops," Koh adds. "And even around managed pollinators, wild bees complement pollination in ways that can increase crop yields."

## *MAKING THE MAPS*

A team of seven researchers -- from UVM, Franklin and Marshall College, University of California at Davis, and Michigan State University -- created the maps by first identifying 45 land-use types from two federal land databases, including croplands and natural habitats. Then they gathered detailed input from national and state bee experts about the suitability of each land-use type for providing wild bees with nesting and food resources.

The scientists built a bee habitat model that predicts the relative abundance of wild bees for every area of the contiguous United States, based on their quality for nesting and feeding from flowers. Finally, the team checked and validated their model against bee collections and field observations in many actual landscapes.

## THE GOOD NEWS

"The good news about bees," said Ricketts, "is now that we know where to focus conservation efforts, paired with all we know about what bees need, habitat-wise, there is hope for preserving wild bees."

## Drippings from the Extractor

by Dave Stocks

A couple of weeks ago, during the midst of one of our torrential downpours, I had occasion to be driving through the valley near Los Banos. The almonds were just beginning to bloom. Conspicuously absent in many of the orchards were bees. As you know, almonds require bees for pollination. I remember remarking to my wife that it was going to be a bad year for the almond growers. It turns out that there is more to the story.

On a regular basis, Kathy Keatley Garvey from UC Davis posts a blog entitled Bug Squad. In the February 20th edition her topic was entitled "*Five Reasons Why All This Rain Is Bad for Almond Pollination Season*" In her article, she interviewed Dr. Eric Mussen. Following are Dr. Mussen's five reasons. While they addressed almonds, they also apply to our home gardens and orchards.

Rain frequently is accompanied by cooler weather, which delays bloom. But, the delay can last only a short while, and then the flowers open and shed pollen, despite the weather. Honey bees usually neither forage on damp or wet blossoms, nor fly in the rain.

If pollen grains come into contact with water, the water enters the openings in the pollen grains, through which the pollen tubes are supposed to emerge. The water is absorbed by the living protoplasm in the pollen grain and bursts its contents.

Free water tends to transport spores of fungal, and sometimes bacterial, diseases to open flowers. Those microbes can invade the floral tissues, or in some cases, begin a journey through the flowers into the branches of the tree. When rain is imminent, growers usually will apply a fungicide to their trees to reduce the amount of infection. Frequent rains can promote multiple pesticide applications.

By almond bloom time, honey bee colonies are collecting as much pollen as they can find, to feed an expanding brood nest. A prolonged period of inclement weather will interfere with nectar and pollen foraging, and leave little food to raise bee brood. Lack of incoming pollens can reduce brood rearing, sometimes even to the point of the adult workers consuming most of the younger brood to save the nutrients for better times.

Beekeepers who are used to seeing their colonies increase from 8-10 frames of bees to 10-12 frames during almond bloom may be disappointed this year due to a situation that is beyond their control. Providing supplemental feed can help their bees to a limited extent, but we have no supplemental feed that matches the nutritional value of mixed pollens.

There is however an upside to the rain. For the first time in several years the native plants appear to be having a good, early bloom. In one of the places I keep bees, they are totally dependent on native vegetation. The last couple of times I've checked, the bees are returning with loads of pollen. A couple of the weaker hives are showing growth. I'm optimistically keeping my fingers crossed!

## **This month in the Beeyard**

By Serge Labesque

When to divide a colony?

Depending on how and when we divide our colonies, the results can be anything between outstanding successes and... nothing to be proud of. This is particularly true when the divides are expected to raise their queens, which is what colonies do when they swarm. This is what these lines are about. The dismantling of hives to form nucs, "shook swarming" and other methods that impose the beekeeper's arbitrary timetable upon the bees won't be considered here.

From this perspective, the best time to perform a hive division is when the bees initiate the process, i.e. when they prepare to swarm, reproductive swarming being the spontaneous and natural division of the colony. Indeed, it's in these circumstances that the in-hive conditions are optimal to obtain excellent queens. When this is not the case, we do well not dividing the colony, at least for the time being. Yet, there are other situations when colonies should not be divided. Cases in point are when the colony is diseased, when it is too small or too weak, when the hive is superseding its queen, or when it's too early or too late in the year, to give but a few examples.

How do we know that a colony is preparing to swarm and that the timing is right? Finding several undamaged swarm cells during a hive inspection is a pretty good signal as swarming is imminent then, if it has not already happened. If the strength of the colony permits, we may divide it immediately. But this is an emergency situation that can be avoided, because the bees actually begin their preparations for swarming many days before they build queen cells. And that is what we need to identify. Note that an abundance of drones, drone brood or queen cups is not necessarily a sign of imminent swarming by the colony. These are only indicative of the season of reproduction.

The clue we are looking for can be found by examining the brood nest and, in particular, the young brood. Here is why: In late winter, the queens lay eggs profusely. Come early spring, the brood nests are swollen and the adult bee populations are large. As we inspect our hives at this season, we easily find lots of sealed brood. But sealed brood is only a testimony of the past performance of the queens; of two to three weeks ago. The more elusive open brood, on the other hand, is the result of the current or very recent egg production of the queens. Since prolific queens lay their own weight in eggs every day at this time of year, their ovaries are heavily loaded with chains of egg cells and nurse cells. They must lose weight before they can fly out with a swarm. This takes several days, and it happens when the queens are forced to reduce their production of eggs, either because the brood chambers become honey bound, or because their nest mates prevent them from laying large masses of eggs. These conditions lead to a sudden and drastic reduction of the amount of young brood and to its scattering

throughout the nest instead of appearing in solid masses, changes that become visible several days before swarm cells are started. Dividing colonies at this stage pre-empts the loss of the swarm and ensures that the developing queen larvae will be well fed in the splits, because there are very large numbers of nurse bees in the hive, and there is little brood to compete for their attention and royal jelly.

Therefore, an important goal of our regular hive inspections in the spring is to find open brood, eggs and young larvae. By comparison to the older brood its quantity and its pattern help us figure out when to divide colonies.

### **March in the apiaries**

In spite of the most unusually wet weather we have been experiencing this winter, overall the colonies are building up quite nicely for spring. Once again beekeepers have to remain flexible in their management of the hives, responding to ever-changing conditions while staying ahead of the needs of the bees.

Starting in mid-winter, we have been adding frames and supers to provide the bees with the space they needed to expand their brood nests and to store the nectar they could collect on nice days. This attention needs to continue as this time of year is a season of rapid colony growth which leads to colony reproduction. So, weather permitting, we regularly inspect hives once a week to ten days at most to discern the early signs of the preparations for swarming. As always, we also keep an eye open for possible health problems. Our inspections are directly aimed at the brood nests. They are kept brief in order to avoid chilling the brood or the queens. Along with any additional space we provide to prevent congestion of the brood chambers, we offer comb-building opportunities to our bees.

Since the season of colony reproduction is upon us, we keep enough equipment at the ready to divide hives when they signal that they are ready for this, and to capture occasional swarms. Setting any of our unused beekeeping paraphernalia as swarm traps may also bring us new residents.

With nice queen cells appearing in hives and divides, one may question the value of dedicating any time to raising queens. Certainly, it's not an absolute necessity, but it is worth obtaining a few daughter queens from our very best hives while the drones abound and the conditions are favorable. These conditions seldom last to the end of spring in my apiaries. The queens we produce as well as the queen cells that are found in excess may be used to requeen colonies that have failing or unsatisfactory queens, or the divides that fail to generate queens successfully. To this end, hobbyists and small-scale beekeepers may use very simple queen-rearing methods, as they do not need to produce large numbers of queens. Doing this is one important step toward maintaining or improving the overall quality of our apiaries.

An alternative to requeening weak hives and laggard colonies is to combine them, as long as they are otherwise healthy. When this is to be done, I most often use the newspaper technique, which consists of stacking the reduced brood chambers of the colonies with a sheet of newspaper between them. Two or three 2"-long slits are cut in the center of the paper. The colony with the more desirable queen is placed in the upper part of the stack to add a level of protection, as the older bees of the other colony

will not run into her on their way to the fields. One week later, we verify that the combination was successful, and we consolidate the brood chamber.

During the latter part of the month, as the temperatures become milder, the growing brood nests begin to expand downward into the lower part of the hives. We make sure that adequate forager clustering space remains between the entrances and the brood nests. On occasion, placing a super with empty frames on the hive bottom may be necessary to create this space.

Frames that fill up with the light mustard honey need to be harvested without delay, or else the honey will crystallize in the combs. However, these early harvests should not expose the colonies to the risk of starving, which can be significant in the spring.

Yes, there is a lot to do in the apiaries at this time of year. But it's a lot of fun, too!

**In summary, this month:**

**Do NOT buy or bring package bees, nucs and queens from outside our immediate area! Instead, arrange to obtain bees from neighbor beekeepers.**

Inspect hives on nice days, at a time when foragers are out in large numbers.

Look for signs of preparations for swarming.

Watch for signs of spring diseases and other health problems.

Provide additional egg-laying space in the brood chambers.

Place supers.

Maintain forager clustering space between the entrances and the brood nests.

Remove frames with old empty comb that bees have vacated.

Add new empty frames, thus providing the bees with comb-building opportunities.

Perform the first hive divisions of the season (but only if and when the hives are ready and when weather permits!)

Place swarm traps.

Clean or dispose of the equipment that held colonies that failed, as appropriate.

Open the entrances of the hives to match the increasing forager activity.

Ensure that the bees have access to water.

Ensure that the hives remain adequately ventilated.

Observe the performance of the queens and colonies.

Re-queen or combine hives that are not performing satisfactorily, and those that have failing queens.

Harvest and process surplus honey.

Give extracted frames, supers and cappings back to the bees for cleaning.

Keep the hive tops secured.

Pull weeds from in front of the hives.

Keep swarm-catching equipment at the ready.

Cull old and misshapen combs.

Render wax from discarded frames.

Routinely clean and scorch tools and equipment.

# Calendar of Events

## Meetings

### **Monday March 6, 2016**

Santa Clara Valley Beekeepers Guild

6:15 pm

Dwell Christian Church San Jose

**1292 Minnesota Ave San Jose CA 95125**

<http://beeguild.org/>

### **Tuesday March 7, 2016**

Gilroy Beekeepers Association

7:00 pm

Old City Hal Restaurant

7400 Monterey Rd.

Gilroy, Ca

<http://www.gilroybees.com>

### **Wednesday March 8, 2016**

Santa Cruz Beekeepers Guild

6:30 pm

El Rio Mobile Home Park,

2120 N. Pacific Ave.

Santa Cruz, CA

<http://santacruzbees.com>

### **Thursday March 9, 2016**

Beekeepers Guild of San Mateo

7:00 pm

Trinity Presbyterian Church

1106 Alameda de Pulgas

San Carlos, CA

<http://www.sanmateobeeguild.org/>

### **Saturday March 11, 2016**

Monterey Bay Beekeepers

8:00 am

<http://www.montereybaybeekeepers.org/>

## Classes and Conferences

**Apr 1:** Queen-Rearing Workshop with Michael Bush, Ed Roberts Campus, 3075 Adeline Street, Berkeley CA, 8:30 to 12:30 lecture; 1:30 to 4:30 hands-on at yard TBA (more lecture if weather is bad). Fee \$65 Alameda County Beekeepers members/\$75 non-members. Limit 20 participants. To register, email Catherine Edwards at richmondgoldhoney@gmail.com to get your name on the list and then mail a check made out to ACBA to: Catherine Edwards, 5212 Esmond Ave., Richmond, CA 94805..

**May 5 - 6:** California Honey Festival (Main Street, Downtown Woodland, CA). NOW ACCEPTING VENDOR APPLICATIONS - by April 1st. <http://www.CaliforniaHoneyFestival.com>

**May 7:** Bee Symposium. Info <http://honey.ucdavis.edu/events>

**Sept 5 - 8:** Western Apicultural Society of North America 2017 40th Anniversary Conference, UC-Davis, CA. Info <http://www.westernapiculturalsociety.org>

**Nov 14 - 16:** California State Beekeepers Association annual convention, Harrah's/Harveys in Lake Tahoe, CA. Info <http://www.californiastatebeekeepers.com/events.html>