

# BEEKEEPING NEWS

OCTOBER, NOVEMBER, DECEMBER 2010



Robert Jacobs, President  
James Brown, Vice President  
Levern Allen, Secretary  
Jackie Wiggers, Treasurer  
Directors  
Martha Boren, Jack Fleming, Kurt Bower,  
Norman Faircloth, Newsletter Editor

a local chapter of NORTH CAROLINA STATE BEEKEEPERS ASSOCIATION, INC.

## Meetings & Programs

### • Tuesday, October 12, 7:00 p.m. (no meal)

Dr. Olav Rueppell will speak about his recent bee research trip to Thailand, "Bee research in Thailand: Eastern Culture and Apiculture."

This is also the time to present our nominating committees slate of officers for 2011. They are:

President--Robert Jacobs

Vice President--James Brown

Secretary--Levern Allen

Treasurer--Ruth Edwards

Director--Sam Coble

(Nominations may also be made by any member)

### • Tuesday, November 9, 6:30 p.m. (covered dish meal)

Emerson Heatherly and Norman Faircloth will present their observations on fall management and practices.

### • Election of officers for 2011

### • Tuesday, December 14, 6:30 p.m.

**Annual Christmas Dinner.** Covered Dish (bring your favorite main dish, side or dessert) Drinks, ice, plates, etc. and professional entertainment provided by GCBA. Appropriate for all ages: All members and family welcome. Evening will be used to socialize and enjoy the festive spirit that the Christmas season provides.



## Articles of Interest



### Bee industry abuzz over mite-free breed

Thursday, 26 August 2010, Stefano Ambrogi, Reuters

A British beekeeper claims he may have discovered a strain of honey bee immune to a parasite that has been gradually wiping out populations of the vital insect worldwide.

Scientists have been trying to find a way to fight the pesticide-resistant Varroa mite.

But now a retired heating engineer who has spent 18 years searching for a mite-resistant breed may have made a breakthrough.

Ron Hoskins, 79, from Swindon in southern England, says he has managed to isolate and breed a strain of bees which "groom" one another, removing the mites.

Since making his discovery, which he says happened by chance, he has been artificially inseminating queen bees in the hope they will establish themselves.

"The Varroa mite has been causing havoc with colonies in countries all over the world, apart from Australia. It has spread at an alarming rate and is very destructive," says Hoskins.

"If this problem is left unchecked it could be a disaster for the food chain waiting to happen," he says.

Hoskins says recent research had found that more than two thirds of all Britain's honeybees have been lost to the parasite. He is now looking for funding to further his research and has had an invitation from Australian officials and counterparts eager to keep the parasite at bay.

Bees, like other insects and birds, are crucial for pollinating crops and plant species which, just as importantly, absorb carbon dioxide and produce oxygen.

#### Habitat loss

ADAS, a British environmental consultancy, says bees are responsible for pollinating British crops worth up to 200 million pounds (A\$350 million) a year. Apples, pears, plums and raspberries are all heavily reliant on their deftness.

Globally, the value to agricultural markets is estimated to be up to 130 billion pounds (A\$227 billion), experts say.

But the humble worker bee population has come under enormous strain from habitat loss, bad weather and disease in the last few decades.

In Britain alone, known colonies were found to have been cut by half between 1985 and 2005, according to the British Beekeepers' Association (BBKA).

The Varroa mite has been one of the prime culprits for the bee's demise. Arriving from the Far East the parasite wormed its way through colonies in Europe, before becoming endemic in the UK in 1992.

The BBKA says Hoskins' work was a potentially exciting discovery, though cautioned that it was still early days.

"Ron is a very experienced beekeeper. His research is small scale, but it is promising," a spokeswoman says.

"Any research like this is welcome, remembering that one in three mouthfuls of what everybody eats is down to bee pollinations.



## Insulin Signaling Key to Caste Development in Bees

info@americanbeejournal.com

What makes a bee grow up to be a queen? Scientists have long pondered this mystery. Now, researchers in the School of Life Sciences at Arizona State University have fit a new piece into the puzzle of bee development. Their work not only adds to understanding about bees, but also adds insights into our own development and aging.

The study, which appeared in the June 30 online edition of *Biology Letters*, shows that a key protein in the insulin signaling pathway plays a strong role in caste development among bees.

A female bee can become either a worker or a queen. Queen bees are larger and live longer than workers. Queen bees are also fertile while workers are essentially sterile. A queen has only one role—to lay eggs—while workers tend the hive, care for the queen and larvae, and forage for food.

“The incredible thing is that both of these types of female honeybees emerge from the same genome,” says Florian Wolschin, an assistant research professor in the School of Life Sciences in ASU’s College of Liberal Arts and Sciences, is the lead author of the study. “So how does that happen?”

Workers determine the fate of the larvae by what they feed them. The amount and composition of food that the larvae receive determine whether they become workers or queens. People have known this for many years, but exactly what happens inside the cells to create this split isn’t completely clear.

Wolschin, Gro Amdam, an associate professor, and Navdeep S. Mutti, a postdoctoral research associate, found that the insulin signaling pathway plays a role in caste development. Insulin is a hormone found in humans and many other animals, and insulin-like peptides have been discovered in bees. Insulin moves glucose—sugar—from the bloodstream into the body’s cells where it can be used.

The researchers suppressed one of the key proteins in this pathway in honeybee larvae. The protein, called the insulin receptor substrate (IRS), has been linked to growth, development and reproduction in mice. The researchers fed the altered larvae a queen’s diet, but they developed into workers, not queens.

IRS is only one component of the process that decides a bee’s ultimate fate. Wolschin says several other molecules are known to play a role, including DNA methyltransferase, juvenile hormone and a protein called TOR.

“Those are all very important and fundamental mechanisms,” says Wolschin. “One single part cannot alone be responsible. It has to be the interplay between different mechanisms that finally results in the divergence of queens and workers.”

The researchers are now looking at the interconnections between several of these factors. “We want to see if maybe there’s a hierarchy involved. Several of the components are probably ‘upstream’ of other processes. So they serve as mass regulators and switches,” says Wolschin.

Honeybees are vitally important to our economy through pollination of crops as well as production of honey, wax and royal jelly. Understanding bee biology is crucial to maintaining this industry in the face of problems like colony collapse disorder.

Wolschin adds that bees also provide an important model system that can help us understand our own biology. For example, scientists have successfully reversed many signs of aging in worker bees.

“That is pretty unique,” says Wolschin. “You don’t have other model organisms in aging research that can do that.” end.



## Michelle Obama Inspires Urban Beekeeping

Ashley Michelle papon, Aug 26, 2010

Looking to develop an unusual but environmentally-friendly hobby? Consider getting into beekeeping, the ancient art of tending bees and cultivating honey. Once largely viewed as a novelty of farms and granola ranch owners, interest in the practice has surged recently, particularly among young, urban women.

“Beekeeping classes from Medina, Ohio, to the suburbs of Washington, D.C., and New York are seeing an unexpected shift in enrollment. Numbers are way up as thousands of novices take up the hobby,” National Public Radio’s Allison Aubrey confirms. “And who are these new beekeepers? Increasingly, they’re women.”

The rising enrollment in beekeeping classes aren’t the only indication that there’s a growing attraction to the beekeeping movement. Subscriptions to bee-oriented publications like *Bee Culture* have spiked, while organizations dedicated to the art of beekeeping are likewise seeing an explosion of member numbers. The San Francisco Beekeeper Association’s numbers have swelled from 75 to over 200 in just the last few years, according to NBC’s Bay Area affiliate.

# Hope You Like Beets, Because The Bee Crisis Could Soon Be Hitting the U.S. Food Supply

The effects of colony collapse disorder have been masked by imported bees, but a perfect storm is brewing, and it will leave no grocery store unscathed.

July 23, 2010 at 9:01am by Kim Flottum

There are not enough honey bee colonies in this country to pollinate the food we need pollinated because of the continuing overwhelming losses during both spring and summer. To meet the increasing demand we import colonies from Australia. Without them, fruit, nut and vegetable growers in parts of the country will have to change what they grow because they couldn't grow what they are growing now.

The colonies we have do not have enough good forage available to thrive, and what land they have is disappearing at a rapid rate. The millions of acres of corn and soybeans and wheat and oats and barley and grassland pasture do not a honey bee restaurant make. They need a continuous diversity of flowers available for a healthy, balanced diet, and, to produce a honey crop... even enough honey for themselves, let alone a surplus for beekeepers to harvest. And with the crackdown demanded by Congress on honey being brought into the U.S. illegally there's a good chance there won't be enough honey produced, and not enough available to import to meet the needs of U.S. consumers.

And honey consumption continues to climb every year -- not per capita consumption, but overall use. Every person in the U.S. consumes right about a pound of honey every year, year in and year out. That comes to about 310 million pounds needed next year, and in a good year we'll produce just 200 million pounds.

This country has never had a honey shortage because there have always been imports available to take up the slack. And we've never had a food shortage because we've always had imports to take up the slack. And we've never had a honey bee shortage because we've had imports as long as we've needed them. But if it all falls apart again this winter...imports of bees get banned, honey bee populations in this country crash again, imported honey gets the scrutiny it needs and much of it is no longer allowed and the illegal stuff is confiscated, and farmers change cropping plans because honey bees aren't available to pollinate...you know what happens?

You're local farm market starts to have bare stalls every weekend, and the cost of joining a CSA goes up next spring, and the cost of honey goes through the roof. Right now the U.S. average, that's average, price for a one-pound jar of honey is right about \$5, but that's including the imported stuff. Take that off the market and the price goes to \$8 a pound overnight., and \$10 in another year.

What else happens? Without Australian bees the price for farmers to rent a colony of honey bees goes from \$150 to \$200 overnight. Maybe more. But here's what's more important. Almonds, which are expanding this year will require 20,000 more colonies or so, and they pay top dollar: \$200 an acre, as I just mentioned. But your local apple grower, blueberry grower and regular small vegetable grower can't come close to that price. They can pay maybe \$75 at most, but usually closer to \$35 or \$40. So far. That, too will change. A conservative estimate is prices will start at \$50. But what's worse is that these growers, for the most part, don't need thousands of colonies, or even hundreds. Or even 50. They need 10, or a dozen. And, like everything else, bulk prices are cheaper. And undoubtedly the crops that he grows will reflect that change. More corn, less squash, more beans, fewer strawberries. More beets, fewer peppers. But beets are good for you, don't you know?

Colony Collapse Disorder has not gone away but so far we have been able to hide the problems it is causing. Slowly the cover is coming off and the real threat to our food supply is at hand. I hope you like soybeans, and corn and wheat, and rice. Find some recipes. Quick.

Read more: <http://www.thedailygreen.com/environmental-news/blogs/bees/colony-collapse-disorder-food-0723#ixzz10rLlkWPh>

importantvoices

thebeekeeper

Kim Flottum



## Big-City Bees Healthier, More Productive

by Jennifer Hattam, Istanbul, Turkey, 08.15.10

While their country cousins' populations collapse, bees in Paris are thriving as having a rooftop hive becomes de rigueur for hotels and restaurants seeking an in-house source of home-grown artisanal honey. According to the BBC, the urban bees are healthier and more productive than ones in rural France and they seem to like the City of Light for the same reason many people do: lots of good food.

"City people like flowers. We have parks, we have balconies, we have roadside verges, we have gardens -- and we are planting them all year round with lots of different species to ensure year-round colour," Parisian beekeeper Simonpierre Delorme told the BBC. "In the countryside, by contrast, these days there is often just one crop dominating an entire area. When that has finished blossoming, there is no more nectar for the local bees."

More Honey, Lower Death Rates▯Thanks to the veritable buffet of eating options -- think of it as an apiarian raw bar or cheese platter-- as well as Paris' 10 years as a pesticide-free zone, the bees in the city's 400 and counting hives produce an average of 50 kilograms (110 pounds) of honey each year, and up to 80 kilograms if things go well. In the country, 30 kilograms is considered a good annual yield. According to the National Union of French Beekeepers, they also have a death rate of just 3 to 5 percent, compared to an alarming 30 to 40 percent in rural areas.

No wonder the Grand Palais, the Westin Hotel, and the famous Tour d'Argent restaurant have all followed in the footsteps of the Paris Opera, one of the first buildings to reinstate the urban apiary tradition, some 15 years ago.

Declining Rural Biodiversity▯Unfortunately, though, the success of bees in the city also serves to further highlight their struggles in the countryside, where declining rural biodiversity has made it hard out there for a pollen eater.

"We did an analysis of the honey we made here in Paris and discovered that it contained more than 250 different pollens. In the countryside there can be as few as 15 or 20 pollens," Olivier Darne, an artist and urban beekeeper who create bee-related art installations to raise awareness about the issue. "It is an unwelcome paradox that city bees do better than country bees. I wish it was not the case. But if you exhaust your resources, you end up with nothing - and this is what the bees are telling us."

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"Pick an aisle at the grocery store and you'll probably find at least one honey product there," said Clark. "It's a product that is added because of its wholesome, pure quality and taste, which is all the more reason why this issue is important."

"We estimate that millions of pounds of Chinese honey continue to enter the U.S. from countries that do not have commercial honey businesses," said Clark. "For example, countries such as Indonesia, Malaysia, Taiwan, Thailand, the Philippines and Mongolia raise few bees and have no history of producing honey in commercial quantities, yet have recently exported large amounts of honey to the United States."

"Honey has earned a special place in people's hearts and minds as a wholesome, natural food. We want to protect that reputation and quality," said Clark.

To further clarify its mission and for trademark purposes, the North American initiative formerly known as "Honest Honey" has changed its name to "True Source Honey."

The True Source Honey™ Initiative is an effort by a number of honey companies and importers to call attention to the problem of illegally sourced honey; to encourage action to protect consumers and customers from these practices; and to highlight and support legal, transparent and ethical sourcing. The initiative seeks to help maintain the reputation of honey as a high-quality, highly valued food and further sustain the U.S.

honey sector. In order to complement [www.truesourcehoney.com](http://www.truesourcehoney.com), the True Source Honey Initiative has launched a Twitter feed and Facebook page to share and discuss important news. You can follow the True Source Honey Initiative on Twitter and Facebook.



## Honey as an Antibiotic: Scientists Identify a Secret Ingredient in Honey That Kills Bacteria

From: info@americanbeejournal.com  
Sent: 7/1/2010 9:31:05 A.M. Eastern Daylight Time  
Subj: ABJ Extra - Newsletter July 1, 2010

**New research in the FASEB Journal shows that defensin-1, a protein added to honey by bees, possesses potent antibacterial properties and could be used against drug-resistant bacteria.**

Sweet news for those looking for new antibiotics: A new research published in the July 2010 print edition of the FASEB Journal (<http://www.fasebj.org>) explains for the first time how honey kills bacteria. Specifically, the research shows that bees make a protein that they add to the honey, called defensin-1, which could one day be used to treat burns and skin infections and to develop new drugs that could combat antibiotic-resistant infections.

"We have completely elucidated the molecular basis of the antibacterial activity of a single medical-grade honey, which contributes to the applicability of honey in medicine," said Sebastian A.J. Zaat, Ph.D., a researcher involved in the work from the Department of Medical Microbiology at the Academic Medical Center in Amsterdam. "Honey or isolated honey-derived components might be of great value for prevention and treatment of infections caused by antibiotic-resistant bacteria."

To make the discovery, Zaat and colleagues investigated the antibacterial activity of medical-grade honey in test tubes against a panel of antibiotic-resistant, disease-causing bacteria. They developed a method to selectively neutralize the known antibacterial factors in honey and determine their individual antibacterial contributions. Ultimately, researchers isolated the defensin-1 protein, which is part of the honey bee immune system and is added by bees to honey. After analysis, the scientists concluded that the vast majority of honey's antibacterial properties come from that protein. This information also sheds light on the inner workings of honey bee immune systems, which may one day help breeders create healthier and heartier honey bees.

"We've known for millennia that honey can be good for what ails us, but we haven't known how it works," said Gerald Weissmann, M.D., Editor-in-Chief of the FASEB Journal, "Now that we've extracted a potent antibacterial ingredient from honey, we can make it still more effective and take the sting out of bacterial infections."



## Insecticide suspected in bee Colony Collapse Disorder

Cindy Williams, Anchor/Reporter, Spring 2010

FALMOUTH, Maine (NEWS CENTER) -- We need bees to pollinate our plants. But bees are disappearing.

Colony Collapse Disorder is a name that has been given to the sudden disappearance of bee colonies.

The bees are getting disoriented for some reason. They can't find their way back to the hive and they eventually die. Some scientists now believe the bee disorientation could be due to a pesticide called Imidacloprid, a synthetic nicotine used in pesticides. Paul Tukey's group, Safelawns.org is asking people to avoid pesticides that include Imidicloprid.

There are many organic alternatives in pest control now on the market. One of Paul's favorites is Eco-Smart. The active ingredients are peppermint, cinnamon and sesame seed oils. All are considered food grade, and safe.

Paul says you still want to read the labels of the organic products and use the proper protection.

Note to Members: There are so many good articles available that I did have to force myself to finally stop. With only one newsletter per quarter you don't have to read it all at once. Feel free to contact me with experiences you have with your bees which you would agree to share with other members. *Norman*

- Don Hopkins, State Inspector: (336) 376-8250
- Guilford County Beekeepers Association web site  
[www.guilfordbeekeepers.org](http://www.guilfordbeekeepers.org)
- North Carolina State Beekeepers Association  
[www.ncbeekeepers.org](http://www.ncbeekeepers.org)



### Guilford County Beekeepers Association

A LOCAL CHAPTER OF THE NORTH CAROLINA STATE BEEKEEPERS ASSOCIATION

Norman Faircloth, editor (nfaircloth@northstate.net)

