



MARYLAND STATE BEEKEEPERS ASSOCIATION

The Beeline

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President's Message

By Paul Dill

At this time of year, we usually compare notes on our winter losses, the spring nectar flow, and what it takes to start a new hive or a new beekeeper in this situation. Here's what I am seeing!

In my opinion, culling old comb and rotating in new foundation was never more important than this winter. Old frames left in for years are certainly less and less good for the bees. The hives that got new foundation last year did so much better than the ones where I let the bees reuse older gear. I have frames out there that are 15-20 years old!

Though I have to be honest here: I lost more bees in the fall than in the winter! I am not sure why: these bees were out on pollination, and almost everything I had out on pollination came back dead.

My advice is, according to the recommendations, 3-5 years of comb use is long enough, even though I don't manage to stick with that always. With all the chemicals that the bees bring in now, I think that the 3-5 year recommendation is correct.

Back when losses averaged 10-20%, I was still experiencing losses like the ones reported now—30% or more—so it seems that not much has changed for me. The ones working with new equipment don't seem to be having the losses that I have had, however.

It seems like a healthy nectar flow this year. Even in my queen castles, I have brood hatching out and the bees are filling that space in with pollen and nectar! This is a good strong flow, because I am seeing honey stores even in small or weak hives. The flow is not going to last much longer, however, and beekeepers should be preparing their harvest plans with the idea that not much more will be coming in.

Another concern: packages this year, same as usual, are causing brand new beekeepers to end up with bad queens and dying bees. There is no warranty for packages anymore. There were widespread reports of unusual nosema infections, as well as the usual queen viability and small hive beetle concerns. Anything we can do locally to produce healthy nucs for our new beekeepers will help us in future years, both with strong wintering and honey harvests. If you want to winter nucs, better start planning by mid-July!

Also in midsummer: participating in fairs gives you ribbons to take home and new friends for beekeeping. At the very least this is extra money, it is great advertising as well, and at its best it creates curiosity and openness to beehives across Maryland. Also, if we do not use this opportunity to speak, we might lose our chance to do so.

Always willing to talk about bees! Paul Dill, President, MSBA

Don't Miss the USDA/ARS Beltsville Bee Research Laboratory Open House!

One of the most wonderful privileges of being a Maryland beekeeper is our proximity to and working relationships with the best bee scientists in the country. And they work very hard to keep us in the loop!

On June 21, rain or shine, the Bee Research Laboratory will host an open house for the public to highlight honey bee research activities conducted at the nation's capital by the USDA Agriculture Research Service.

The Lab is located at the USDA Henry A. Wallace Beltsville Agricultural Research Center, Entomology Road, Building 476, BARC-E, Beltsville, MD 20705

Schedule of Events:

10:00 a.m.–12:00 noon Each 30 minute activity will be repeated 4 times during the morning.

Station 1. Colony Inspection and Nutrition– Miguel Corona and Bart Smith: Colonies will be opened and checked for honey bee disease, pests and parasites. Feeding methods for protein and sugar syrup will be demonstrated and discussed.

Station 2. Queen Rearing in the Bee Yard–Nathan Rice and Andy Ulsamer: See techniques used in the apiary to rear queens on a small and large scale.

Station 3. APHIS National Bee Pest Survey–Jeff Pettis and Vic Levi: See a demonstration of field collection methods being used to check for exotic pests in the U.S., including how to look for the Asian mite Tropilaelaps.

Station 4. Testing Bees for Pesticide and Pathogen Effects–Michele Hamilton, Jody Johnson, Ryan Schwarz, and Margaret Smith: Find out how we challenge bees to determine their susceptibility to pesticides and pathogens, including Nosema and viral infections.

12:00 noon–1:30 p.m. Lunch on your own.

1:30–3:30 p.m. Each 30 minute activity will be repeated 4 times during the afternoon.

Station 5. Research Round Table–Jeff Pettis, Miguel Corona, Sam Zhang and others: Bee Lab scientists will present a summary of their research and some of the latest findings in the field of apiculture, along with a question and answer session.

Station 6. How APHIS National Bee Pest Survey Samples Are Analyzed – Robyn Rose, Vic Levi, Dawn Lopez, Karen Rennich, and Margaret Smith: The survey team will show how the field-collected samples are examined in the lab, discuss survey results to-date and the overall goals of the APHIS National Survey.

Station 7. Unraveling the Genetic Code of Pests and Diseases–Judy Chen, Scott Cornman, and Jay Evans: Hear how BRL scientists are working to understand pests and

pathogens and how this knowledge can then be used to design novel new controls.

Station 8. Bee Disease Diagnostic Lab–Sam Abban, Andy Ulsamer and Bart Smith: See an exhibit of common honey bee pests and diseases and observe techniques used for field and laboratory identifications.

Please bring and use protective equipment when visiting and observing activities in the bee yard.

Additional information, including directions, is at <http://www.ars.usda.gov/News/News.htm?modecode=12-75-05-00>, by calling 301-504-8821 or email to Bart.Smith@ars.usda.gov.

UPCOMING LOCAL EVENTS

Queen of the Sun documentary film: multiple screening dates. More at www.BaltimoreFreeFarm.org

MSBA Spring Meeting: June 18, 2011, 8:30 AM to 3:30 PM, University of Maryland/College Park Entomology Department, Plant Sciences Building Auditorium

MSBA Fall Meeting: November 12, 2011, 8:30 AM to 3:30 PM, Maryland Department of Agriculture, 50 Harry S Truman Parkway, Annapolis, MD

Virginia State Beekeepers Assoc. Meeting, June 17-18 Fredericksburg, VA. www.virginiabeekeepers.org

Other Upcoming Events:

Pollinator Week- June 20-26, 2011, find events at http://pollinator.org/pollinator_week_2011.htm.

2011 Northeast Treatment Free Beekeeping Conference, July 19-24, Leominster, Mass. For more information: (978)407-3934 or email info@BeeUntoOthers.com

EAS 2011 Short Course and Conference, July 25 - 29, Warwick, RI. Information: www.easternapiculture.org

11th Annual NAPPC International Conference, October 25 to 27, 2011, Smithsonian Institution, Washington, DC. Info to be available at <http://pollinator.org/nappc/about.htm>.



Maryland State Beekeepers' Association**Spring Meeting, June 18, 2011****Plant Sciences Building, University of Maryland/College Park**

8:30 am	Refreshments, Coffee, Donuts, etc.	
9:30 am	Opening and Welcome	Paul Dill, President
9:45 am	Maryland Apiary Inspector's Report	Jerry Fischer, Maryland State Inspector
10:00 am	Ongoing Research Concentrations and Projects at the Baton Rouge Bee Lab	Dr. Lilia De Guzman, Honey Bee Breeding, Genetics, and Physiology Research USDA/ARS Baton Rouge
10:45 am	Integrated Pest Management (IPM) in the MidAtlantic	Dean Burroughs, Eastern Shore Beekeeper, Assoc. Professor at Salisbury University
11:30 am	<i>Lunch (On your own or Subway order when you arrive)</i>	
1:30 pm	International Connections How Honeybees Build a Better World: Beekeeping In Heifer International's Global Economic Development Programs	Susan Fulton, Board Member, Heifer International
2:15 pm	Breeding Honey Bees For Resistance To Mites And Small Hive Beetles	Dr. Lilia De Guzman, Honey Bee Breeding, Genetics, and Physiology Research USDA/ARS Baton Rouge
3:00 pm	Panel: Senior Beekeepers Respond to Your Anonymously Submitted Questions	
4:00 pm	Adjourn	Paul Dill, President

Directions:

From Frederick: take I-270 south to the inner loop of the Capital Beltway, I-495 North. Take Exit 25B, turning south on Route 1. Proceed for two miles to the Campus Drive entrance on your right. Get immediately into the left lane. At the circle with the "M" logo and a stop sign, veer right and get into the right lane of the circle, following the road to your right. You will go over a few speed bumps and to your left you will see the Geology Building, then the Plant Science Building, then the Regents Parking Garage. Turn left on the street between Plant Sciences and the Garage, then turn right into the Garage.

From Baltimore/points north: Take I-95 South to Exit 27 towards College Park. After a long exit ramp, take Exit 25B to Rt. 1 South. Proceed for two miles to the Campus Drive entrance on your right. Get immediately into the left lane. At the circle with the "M" logo and a stop sign, veer right and get into the right lane of the circle, following the road to your right. You will go over a few speed bumps and to your left you will see the Geology Building, then the Plant Science Building, then the Regents Parking Garage. Turn left on the street between Plant Sciences and the Garage, then turn right into the Garage.

From Washington and points south: Take I-295 N to the New Carrollton/MD-410/Hyattsville exit, go 0.2 mi, then turn left on Riverdale Rd (MD-410/East-West Hwy), go 0.8 mi. Turn right on Kenilworth Ave (MD-201 N), go 0.9 mi. Turn left on Paint Branch Parkway, go 1.6 mi. Cross US 1 to enter Campus Drive. Get immediately into the left lane. When you come to the circle with the "M" logo and a stop sign, veer right and get into the right lane of the circle, following the road to your right. You will go over a few speed bumps and to your left you will see the Geology Building, then the Plant Science Building, then the Regents Parking Garage. Turn left on the street between Plant Sciences and the Parking Garage, then turn right into the Regents Parking Garage.

MSBA Spring Meeting 2011 Speakers

The Maryland State Beekeepers are pleased to welcome **Dr. Lilia De Guzman** of the USDA/ARS Baton Rouge Bee Lab as our keynote speaker this month. Dr. De Guzman will discuss her research work on breeding genetic resistance to both Varroa mites and hive beetles into honeybee stocks, as well as offering an overview of the research concentrations and projects currently underway at the Baton Rouge Labs.

If we can breed bees whose behaviors and physiology are naturally resistant to pests, we can deeply reduce the number of chemical controls we may be tempted to use on their behalf, perhaps saving ourselves work and expense, and our bees shorter and less viable lives!

Dr. De Guzman is a Research Entomologist who has studied Varroa and tracheal mite resistance of Yugoslavian and Russian bees. She also studied the molecular genetics of Varroa mites worldwide. Her current research is on the mechanisms of resistance of Russian honey bees to Varroa and SHB. Her work is featured in the May *Bee Culture*, where her research found direct application in the crisis facing Hawaiian beekeepers, who are also new to the struggle with SHB.



Dr. De Guzman will be joined by **Ms. Susan Fulton**, at-large director of Heifer International, who will

discuss the role of donations of honeybees to families in developing countries as part of her organization's "teach a man to fish" style of aid and training. Heifer promotes beekeeping as part of its livestock programs because increased pollination boosts crop yields, while honey, beeswax and pollen create new income streams. Adding beekeeping to a small farm helps diversify operations, so the farmers have protection against economic fluctuations.



Longtime Eastern Shore beekeeper Dean Burroughs will present on application of Integrated Pest Management Techniques in the Mid-Atlantic, and MSBA will once again offer a panel discussion where attendees can submit questions anonymously and have them answered by a variety of senior beekeepers. We also hope to welcome a short presentation from a new member of the UMD Entomology Department.

Perhaps most importantly, this is a chance for you to discuss your bees with beekeepers at all levels of experience in the same local environment: the best meeting discussions are often the lessons we learn from each other!

Local Swarms of Note

All beekeeping is local, and we live in an unusual locale, so some of our swarms end up in the darnedest places! If you have a cool swarm catching story with a photo,



David Morris at the White House, 2009. The bees were from the neighborhood, not the South Lawn!

please contact the editor at dcbees@dcbeekeepers.org, and we may include it in the November newsletter! This month's swarms share the theme of "high and mighty!"



Veil-less Scott Seccomb during Wilson Bridge Project, 2009. Frightened construction workers all ran away!

Capturing the Swarm: The Two Big Questions

By Dean Burroughs, Master Beekeeper, Salisbury MD

March through June in the Mid-Atlantic region is swarm season. Your own personal hive may swarm, or more frequently, you get a phone call from a nervous neighbor or unknown person in town. Hmmmmmm! As any beekeeper knows, a prime swarm is a beautiful sight and the cluster may contain a queen and 2,000 to 30,000 bees. This is one of nature's ways of colony reproduction. The average person does not know this and taking the call may create an opportunity to inform and educate that person or persons, plus to hive a swarm.

In answering the phone, a nervous and anxious person usually responds, "Hurry! There's an angry swarm of killer bees in my yard." (Swarms are not defensive and chances are remote, in the East, that they're Africanized bees.) This person explains that the swarm is the size of a basketball and hanging only 3 feet from the ground. Even though the caller is sincere about the description, from experience, I have answered similar calls and found the swarm or a hornet's nest (surprise) 30 feet up a tree. Immediately two personal questions must be answered—

1) Is the swarm worth collecting? Sure, for the purpose of replacing stores and for filling those empty bee boxes. Who among us has not lost their share of bees to diseases and swarming the past few years? Or consider that you already have two hives in the back yard. You hesitate because by increasing in numbers your neighbors may complain or your spouse will threaten to leave! Important points to ponder, don't you think? O.K. then, more likely, if the swarm is conveniently located and you desire to increase your numbers, you go. Perhaps too, you enjoy nature and saving bees from declining is important to you. The reason to act could be one or all of the above.

2) Should I charge a fee? More and more frequently now, beekeepers are charging to collect swarms. Maybe rightly so. Pest control companies will charge handsome fees in responding to swarm calls, so why not beekeepers? That is a choice each beekeeper must make depending on his or her personal circumstances. Some beekeepers in the area are charging \$25 or so for collecting swarms that are conveniently located in distance and site. I know of one

swarm located high in the walls of a local school gymnasium where exterminators charged several hundreds of dollars to remove it. Out west, (Texas, California, Arizona) I understand swarm control businesses have formed for the sole purpose of capturing Africanized bees and they charge \$150 up, per swarm, for their services.

Personally, I do collect swarms on the Eastern Shore and limit my trips to a 10-mile radius from home. Also, I very carefully screen calls to determine the situation and only collect swarms conveniently on a bush, low hanging limb, mailbox, etc. I do not rip into the walls of buildings to extract swarms, nor will I climb 30 feet up a tree and risk a broken neck. I do not normally charge a fee.

However, there are exceptions. When I am called to a local commercial business site, encountering an emergency situation, I do charge an appropriate fee. For example, fast, efficient and expert action may be essential in removing a swarm of bees from a commercial business site in order for business to proceed as usual. I have removed bees from the front door of a tool company; from entrances to an insurance firm and bike shop and from a tool box of an on-site brick layer. I responded to emergency calls from all these sites, removed bees so business may resume and charged fees, respectively.

In averaging a collection of a dozen or so swarms each spring, I'm registered with the local Agricultural Extension Agency, plus tree trimming businesses. These contacts call me frequently. Lastly, in March of each year I write and send letters (copies available on request) to local pest control companies informing and educating them about swarming and the plight of the declining bee population. I receive repeated calls from these companies or their clients and this symbiotic relationship affords me an opportunity to save and preserve our wonderful and most efficient pollinators, honey bees.

So, there are hosts of reasons in considering whether or not the swarm can or will be collected. Most of all take a moment and answer the two proposed questions above. Then you pause for a time, deliberate, calculate and plan a course of action. What's that? I have an emergency call? A swarm of bees . . . excuse me, I gotta go!

2010-2011 Preliminary Winter Loss Report at 30%

Based on preliminary analysis of reports of 20% of US beekeepers, representing about 15% of the hives in the country, honeybee hive winter losses continue to hover around 30%, amounting to an average of 38% yearly losses when summer and spring crashes are factored in. The report is the work of Dennis vanEngelsdorp, Jerry Hayes, Dewey Caron, James Wilkes, Robyn Rose, and

Jeff Pettis, with data from an online survey by the Apiary Inspectors of America and the USDA in which Maryland beekeepers were asked to participate earlier this Spring. Beekeepers report that losses around 13% are sustainable, so these levels constitute an ongoing threat. A more detailed final report is being prepared for publication at a later date.

The Maryland State Honey Standard: HB 809

Honey is definitely on the mind of our legislators in Annapolis. In December, the Maryland Department of Agriculture circulated draft regulations concerning “local” labelling that could complicate the life of, if not disadvantage, many of our fellow beekeepers if not for the informed input of the beekeeping community.

This Spring, in response to growing concerns about honey adulteration and consumer protection, including a high profile Federal prosecution in Chicago of companies which had smuggled \$40 million in mislabeled and antibiotics-tainted honey, state legislators took an interest in protecting consumers from fraudulently labeled honey. When honey is mislabeled, it is careful and honest beekeepers who are penalized. When honey contains unidentified drugs, it can be fatal to some of the most vulnerable among us.

Launched in great part due to the efforts of beekeeper Byron Rice, Maryland’s HB-809 offers a definition of

honey, an honest attempt to protect Maryland beekeepers and consumers from fraudulent adulteration. It has passed the House and is being considered by Senate Committee.

The bill is well-intentioned, and a definition is sorely needed, but HB-809 needs some corrections to be acceptable. You can read the most recent text of the bill at http://mlis.state.md.us/2011rs/amds/bil_0009/hb0809_99091301.pdf A short list of concerns includes mistakes in the standards for glucose, fructose, and moisture in honey, as well as the potential for banning the labelling of creamed or spun products as honey. You can read an overview of these concerns at <http://www.bumblebees.com/honeystandard.html>.

The bill was still in Senate committee at the close of this year’s legislative session, with commentary from the MSBA and others submitted for an April 2011 hearing. There’s still time to share your thoughts on this matter!

MSBA Commentary on HB 809

To: Members of the Senate Committee on the Environment, Health and Education

Re: House Bill 809: Maryland Standard of Identity for Honey

Dear Senators:

Maryland’s beekeepers are deeply grateful to our state representatives for their actions to protect the state’s consumers and honey producers from adulterated food product and unethical food labeling practices. The current draft of House Bill 809 (referenced above) represents progress towards this goal, but several potential omissions, errors, and misunderstandings may result in this bill making the production of conforming honey impossible for our beekeepers, resulting in healthy, local products becoming unavailable to the public. We suggest the following considerations:

1. At 10-1801 (1), the language “Results from the harvest of nectar by honey bees and the natural activities of the honey bees in processing the nectar;” allows for honey resulting from the feeding of non-floral products to bees and the mechanical ripening of same. We recommend the following insertions: “Results from the harvest of nectar FROM PLANTS by honey bees and NATURALLY RIPENED IN THE COMB BY the natural activities of the honey bees in processing the nectar;”
2. At 10-1804 (A), the language “HAS A RATIO OF FRUCTOSE TO GLUCOSE GREATER THAN 0.9%” requires a ratio that does not occur in nature. The appropriate wording would be “HAS A RATIO OF FRUCTOSE TO GLUCOSE GREATER THAN 0.9”
3. At 10-1804 (A)(3), the standard requires that pollen

not be filtered from honey: this greatly reduces shelf life and purity. We recommend this language read: “HAS NOT BEEN FILTERED TO REMOVE UNNATURAL CHEMICAL OR ELEMENTAL CONTAMINANTS NOR HAS REMOVED THE ENZYMES AND OTHER NATURAL HONEY CONSTITUENTS.”

4. At 10-1804 (A)(6), the language “DOES NOT HAVE A MOISTURE CONTENT GREATER THAN 23%” would allow any of the honey produced in Maryland to spoil in the jar, jeopardizing consumer health. The appropriate wording would be “DOES NOT HAVE A MOISTURE CONTENT GREATER THAN 19%”

5. Section 10-1805 of the Bill does not provide for labeling a crystallized honey product as “Crystallized”, “Creamed”, “Whipped” or “Spun” honey, all of which rely on a mechanically controlled crystallization process. We suggest an additional paragraph (G): “HONEY, WHEN CRYSTALLIZED USING INDUCED AND CONTROLLED CRYSTALLIZATION BY MECHANICAL MEANS OF PROCESSING AND REFRIGERATION, MAY BE LABELED AS “CRYSTALLIZED HONEY”, “CREAMED HONEY”, “SPUN HONEY” OR “WHIPPED HONEY.”

As the President and Vice President of the state’s 103-year-old non-profit beekeeping organization, we applaud your interest in this issue and thank you for your attention to this matter,

Sincerely, Paul Dill and Antoinette Burnham
Maryland State Beekeepers Association, Inc.

Fairly Rewarding: Participate in Community Fairs and Festivals!

We all know that beekeeping is threatened by zoning, sprawl, and environmental changes, but our biggest public problem is fear and ignorance. Happily, many of our neighbors overcome their concerns through the most traditional activity in the beekeeping book: hobbyist participation in local fairs and festivals.

Observation colonies and honey sales tables are often the first opportunity that many have to see bees, and to connect them with both pollination and hive products. Fairs are even more valuable than events to which beekeepers are purposefully invited, because we can reach out to people who never thought of bees, or considered that they might play a role in their local environment.

Fairs also serve spectators in the hundreds, if not thousands, a reach no single beekeeping club can accomplish. To organizers, having no beekeepers to demonstrate and

offer their wares is a temptation to reduce the amount of space given to such activities, and use their energy to find other revenue to support their organizations.

There is an upside of fair participation for individual beekeepers, as well! You can win premiums for all sorts of hive-related items: in fact, many fairs struggle to get entries for every category that can put \$20 and a ribbon in your pocket! Volunteers can usually sell hive products at club booths, easy marketing for folks who only have a handful of jars of honey each year. Long time beekeepers often find that fair customers become long-term consumers of their products.

Learn more about how you can participate in your local fair through our list below! Check for eligibility, though: entries for Charles, St.Mary's and Calvert are limited to the 5 Southern MD counties, for example.

Maryland Fairs & Festivals that Feature Beekeeping Activities

More details at www.mdbeekeepers.org

Fair	Dates	Entries Due	Website	Phone
Allegany County Fair	July 16-24	July 17	www.alleganycofair.org	301.729.1200
Anne Arundel County Fair	Sept 14-18	Sept 12	www.aacountyfair.org	410.923.3400
Calvert County Fair	Sept 28-Oct 2	Sept 26	www.calvertcountycountyfair.com	410.535.0026
Charles County Fair	Sept 15-18	Sept 13	www.charlescountyfair.com	301.932.1234
Great Frederick Fair	Sept 16-24	Sept 14-15	www.thegreatfrederickfair.com	301.663.5895
Garrett County Fair	Aug 13-20	Aug 13	www.garrettcountyfair.org	301.533.1010
Harford County Fair	July 28-31	July 26	www.farmfair.org	410.838.8663
Howard County Fair	Aug 6-13	Info on 6/12	www.howardcountyfair.org	410.442.1022
MD Honey Harvest Festival	Sept 17	Sept 17	www.mdbeekeepers.org	410.239.7496
Maryland State Fair	Aug 26-Sept 5	Aug 23-24	www.marylandstatefair.com	410.252.0200
Montgomery County AgFair	Aug 12-20	Aug 12	www.mcagfair.com	301.926.3100
St. Mary's County Fair	Sept 22-25	Sept 21	www.smcfair.somd.com	301.475.8434
Washington County AgExpo	July 22-30	July 22-23	www.agexpoandfair.org	301.432.6162



MSBA OFFICERS & DIRECTORS:

President: Paul Dill (302) 249-1866
 1ST Vice President: Toni Burnham (202) 255-4318
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 Treasurer: Robert Crouse (410) 638-0105
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Directors:
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 David Smith (410) 556-6222

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 Wicomico: Dean Burroughs (410) 546-2910
 Worcester: Wes Townsend (410) 641-1030
 Washington D.C.: Toni Burnham (202) 255-4318
 Fairfax, VA: Pat Haskell (703) 560-3484

LOCAL BEEKEEPING ASSOCIATIONS:

ALLEGHENY MOUNTAIN BEEKEEPERS ASSOC.
 President: Ben Cooper (814) 324-4550
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 President: Loyd Luna (410) 757-5797
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 President: Robert Greenwell (410) 279-3086
 CARROLL COUNTY BEEKEEPERS ASSOCIATION
 President: Rich Boger, beebeyond@rock.com
 CENTRAL MARYLAND BEEKEEPERS ASSOC.
 President: John Harmon (410) 771-1701
 EASTERN SHORE BEEKEEPERS ASSOC.
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 President: Bill McGiffin (301) 829-3880
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 HAGERSTOWN VALLEY APIAN SOCIETY
 President: Mark & Sara Gibson (301) 371-0811
 MONTGOMERY COUNTY BEEKEEPERS ASSOC
 President: Jim Fraser (301) 518-9678
 SUSQUEHANNA BEEKEEPERS ASSOCIATION
 President: Mike DeWald (410) 276-2647

MDA OFFICE OF APIARY INSPECTION

Jerry Fischer (410) 562 3464, FischeJE@mda.state.md.us

MSBA HOME PAGE:

www.mdbeekeepers.org, webmaster@mdbeekeepers.org

Please check the MSBA membership "thru date" on your mailing label! If your dues are not current, please pay them at the June 18 meeting or mail to: MSBA Treasurer, Robert Crouse, 1606 Dogwood Lane, Bel Air, MD, 21015.

Also note: we will only accept dues payments for a single year. Additional payments may be credited as MSBA donations.

THE BEELINE

c/o A. Burnham
 318 12th Street NE
 Washington, DC 20002



Address corrections requested

The Great Sunflower Project: Saving the Honeybee One *Helianthus* at a Time!

"The Great Sunflower Project!" has created a buzz since 2008 with activities such as gardening, sunflower and bee watching, art, and science. These events are raising awareness about pollinators. Participants watch sunflowers until five bees have visited and never longer than 30 minutes. The information is then sent to scientists at San Francisco State University by mail or online.

Creating an environment that provides shelter and food for pollinators is one of the most rewarding of garden activities. You can do it anywhere—city rooftops, school gardens, a sidewalk strip or your own back yard. For very little effort, you can create beautiful and critical habitat for native bees and abundant forage for honey bees.

The project invites you to "add a yard to your yard" challenge in 2011. Here's how:

Select one square yard, (36" x 36") to transform into a pollinator garden. Make sure that the site gets ample sunlight and a source of water is nearby.

Choose plants to fill your square yard that will bloom continuously throughout the season. Diversity is key. Think about three to five plant varieties in bloom at all times. Make sure to include 'Lemon Queen' Sunflowers to anchor your planting and observe and report your bee observations.

Some other good choices might be California poppies (*Eschscholzia californica*) 'Tropical Sunset', *Echinacea* (*E. purpurea*), Bee Balm (*Monarda 'Bergamo Bouquet'*), along with cosmos and alyssum. Most pollinators are attracted to obvious clusters of blooms, so plan to group similar plants together for maximum effect.

To find out much more information on planting for pollinators, check out the new Xerces Society Guide to "Attracting Native Pollinators."

Here's to making a difference by creating a more bee-friendly world



From Scientific American: Tired Bees Make Poor Dancers

It seems like sleep deprivation isn't good for anybody, including the community surrounding the fatigued party! A December 2010 report from the (US) National Academy of Sciences based on a study conducted at the University of Texas/Austin found that sleep-deprived bees danced less precisely, leading to less efficient foraging and less competitive colonies.

Most scientists agree that sleep in insects is poorly understood, but resting states have been identified. Beekeepers might find application of this research in situations where the bees are frequently or continuously disturbed, such as during hive movements to follow pollination of crops, or constant pest or predator pressure.

The experimenters found a means to keep some of the bees in a colony from achieving a sleep-like state by

attaching magnetic steel discs to 25 bees that had been trained to visit a feeder of sucrose solution located 1 kilometre away. They recorded the waggle dances by these bees, and compared them with their more rested counterparts (you can see a video comparison at <http://bcove.me/9woq7nc7>).

This may seem like an odd topic for bee researchers, but participating scientists like Dr. Tom Seeley of Cornell have long found relevant mechanisms in bee colonies for effective group decision making and labor sharing, and how those lessons might be extrapolate to other biological systems, like our own. It is therefore natural to look not only at the factors that make a system function, but those that impair its efficiency.

And by the way, bees apparently prefer 8 hours a day, too.

Small Hive Beetle Ups and Downs, and a New Up: Teal's SHB Trap

By Julia Gorey, Montgomery County Beekeepers

Like many of you, I'm a small scale suburban beekeeper, in this hobby for the joy and good green vibes that come from a buzzing hive. It's a positive contribution to my little corner of the world. I'm three years "in" with two hives. So far my bees have made it through two winters and I haven't had a swarm (so far!) Last year I even managed to harvest a pretty good amount of honey, which was a terrific egoboot and made me popular among my neighbors. All in all, beekeeping has been very rewarding, but by far the biggest bee frustration has been battling Aethina Tumida, or small hive beetle (SHB).

Beetle Hell

Ever since the day three years ago when I first took off the inner cover and saw three beetles running for a cranny, I've been vexed by these creatures. I've tried just about everything to get rid of them. Early on, I learned to take off a hivetop feeder the moment it's empty or else be prepared to find pupating beetles in the empty wells. This taught me my first and most important lesson in beetle management (and led me to use a different style feeder): don't have any hive space that a bee can't defend! The beetles were having no problem escaping the bees by going through the screen in my feeder. Gallon Ziplock baggies were the best solution. After a bit of background reading, I also decided to minimize all hive entries and exits and began by replacing my screened bottom board with a solid one. I know conventional wisdom says the screen helps hive ventilation, but my bees don't seem to care. I plugged up the top entrance, so beetles as well as bees were forced to use only the front door.

For a while I was soil drenching with Gardstar, but grew increasingly uncomfortable with the irony of spreading a toxin around my hive in order to help my "green" hobby. Besides, after reading the instructions I became nervous about applying it (goggles, gloves, mask...), and every time we had a gullywasher I had to reapply the darn stuff. No one could tell me accurately how long it remained effective in the soil after a rain. I really didn't see any evidence that it was working anyway, so I stopped. I've put CheckMite+ on the bottom board, with the fervent hope that the little beasts would seek shelter in the paddle and die, as they're supposed to. Ha! They aren't so easily duped. And there's inconsistent information out there about how long to leave the paddle in your hive. I've put down nematodes, with help from club member Chris Costa. The jury's out on this one; I'm not sure how much it helped, but at least it didn't hurt anything and I wasn't spreading a neurotoxin. Perhaps it did some good. I use lots of beetle blaster traps and doubtless they help a bit, but they have their problems. First of all, the apple cider vinegar evaporates and has to be replaced fairly

often, which means tearing apart the hive to do it (I normally wouldn't go into the bottom box, except to replace traps). Plus, I find that the plastic "wings" of the trap often don't lay absolutely flat against the frames, especially after they've been in a hive a little while. The result is that those wings become a sheltering place for SHB. I went in a few weeks ago to replace some of these traps, and had beetles come scurrying out when I ripped off the nowevaporated traps. Ugh! Finally, people advised that I relocate my hives to break the SHB life cycle, but that's not possible given my small suburban yard; and really, wouldn't it just be a matter of days before the beetles would find the hives again? It doesn't seem like it would work for very long, and moving hives is a pain. I've also briefly tried oil traps beneath the bottom board, and diatomaceous earth.

In short, the beetle has become my nemesis.

My longsuffering husband, Mark, has listened to me gripe about all of this, and since he works at USDA he's not unfamiliar with the plight of the honeybee. One day he was reviewing the 2010 Honey Bee Colony Collapse Disorder Progress Report, and mention of an Inhive Trap and Attractant Composition for the Control of the Small Hive Beetle caught his eye. It was developed by Peter Teal of the Agricultural Research Service. Curious, and anxious to stop my grouching, he downloaded the patent, called Peter Teal, and did a few web searches about hive beetle. Fortunately he is comfortable around tools, and was soon tinkering with a prototype.

Building a Teal SHB Trap

In a nutshell, the trap is a device whereby beetles and larvae crawl through holes into a lure, but can't get back out. The trap is fairly easy to assemble, but I would recommend that anyone first READ the patent, or at least skim it and EXAMINE THE DIAGRAMS: <http://ddr.nal.usda.gov/bitstream/10113/9577/1/ND44010376.pdf> The most difficult part of the construction is acquiring two conical bottom 96well PCR culture plates, which will form the top portion of the trap and access to the lure. These can be purchased from medical supply wholesalers, but unfortunately they are generally sold in gross quantities. I was fortunate in having a neighbor who works at NIH and was able to get me a couple of used plates from her lab. Once you acquire them, you'll need to drill a 1/8 inch hole in the bottom of each well. Next, you need a solid bottom board and a hive stand (some folks call this latter piece a platform...Brushy Mountain calls it a hive stand) and a 2 inch deep rectangular Tupperware container approximately 10 x 7 inches (got mine from Target). Basically you are going to
(Continued next page)

The Hive and the Honeybee? There's an App for that!

Even 5 years ago, the beekeeping information available online was piecemeal and somewhat untrustworthy. Today, not only classics but new tools are becoming much more widespread and applicable to more practitioners.

Beekeeping has come to the world of online digital readers! The iTunes store sells an iPad and iPhone app of Langstroth classic *The Hive and The Honeybee*, but you can get a free version for your Kindle and other readers! Perhaps more interesting for hardcore beekeeping clas-

sists, Cornell has digitized the 1853 edition at <http://bees.library.cornell.edu/>, along with more than 32,000 pages of other historic books and journals.

You can find hive record keeping applications for several smartphones, as well as web services like HiveTracks (free, www.hivetracks.com).

Beekeepers who are using these and other tools are invited to share their experiences in future editions of *The Beeline*!

Teal's SHB Trap, continued from page 10

construct a shelf in the frame of the hive stand that this Tupperware piece fits into, and which slides between the hive stand and the bottom board. I can't give exact dimensions because it depends on the size of Tupperware, but you're going to cut a notch in the back and sides of the hive stand to accommodate a plywood slide. If you don't have a table saw, glue strips of wood on the sides of the hive stand leaving the back for the slide. Then construct a plywood shelf that the Tupperware container will sit in, with a frame around the edges so it'll stay stationary. I will bring a finished trap to the May meeting for people to examine.

Cut a hole in the top of your Tupperware container to accommodate the PCR plates, sealing the edges with silicone caulk. Now cut the outline of your PCR plates out of the bottom board, so that the plates show through.

The Lure

You're almost done. The patent describes using a variety of lures, none of them easy to make.

When small hive beetles invade a beehive, they bring in yeast that grows on the pollen, and as the yeast grows and ferments it releases compounds that mimic honey bee alarm pheromones and are highly attractive to other beetles. Therefore, Peter Teal describes making complicated lures based on this pheromonelaced yeast. Terrific results, but the prospect of cooking up pollenbased dough, inoculating it with the yeast cells of 300 adult beetles (preferably males or virgin females) struck me as more than I wanted to get into; likewise, the thought of concocting an alternate lure using a beetlevectored fungus. Luckily Teal told Mark that natural (unsweetened) applesauce works nearly as well, and is certainly easier for the average beekeeper to come by. Use about 3 cups in your Tupperware, and put on your top. I can attest that it works very well. I note, however, that the patent describes trapping beetles and larvae; Teal's pheromone basedlures are apparently more efficient at capturing beetles, whereas in my experience the applesauce attracts many larvae, but only few beetles.

I first put the trap in a hive in early November, and checked it a few weeks later. Nothing was there, but given the weather I wasn't expecting much. Teal's diagrams show the greatest numbers of beetles are captured in July and August, with a significant decrease by September. This March I took the trap out, cleaned it and put it back; then I promptly forgot about it until early April. When I finally remembered to check it I was shocked at the larva that was both inside the trap and on top of it. The "ick" factor was so high that I promptly put it all down the garbage disposal without taking a photo, but have since reloaded the trap and after about a week again have a good number of larvae. I've taken photos, but given the lack of contrast between beetle larvae and applesauce it doesn't show well. Note that the holes in the trap become blocked by all the bee clippings this time of year, so I'd recommend checking your trap at least every two weeks.

Why Use This Trap?

The best feature of this trap is that it's so easy to check. Since it inserts from the back of the hive, I can go out early in the morning to remove it, dispose of the contents, reload applesauce and put it back, ALL within 5 minutes and without gearing up and getting out the smoker. This means I can check it on a weekday morning before going to work, so it fits well into my hectic life. The down side? Total cost of construction is around \$60, not including labor, but that's mainly the hive stand and bottom board. It also requires basic carpentry skills. Perhaps someone or some company could be convinced to make these for sale.

I don't expect this trap to completely solve anyone's SHB problem, but it does appear to be a convenient, non-chemical, effective way to battle the beasts. A web search shows that the trap is in widespread use, and again, I'd refer readers to the patent for specific information on efficacy. The beetle fight goes on, with thanks to Peter Teal of the Agricultural Research Service and my husband Mark for constructing the trap.

Not Again with the Cell Phones?!

During the many fairs, demonstrations, and public presentations in which beekeepers will participate this summer, we can count on another, newer tradition to rear its irrational head: the question “Don’t they say that bee disease is caused by cell phones now?”

On May 15, news outlets around the world released the results of an April 2011 study by Dr. Daniel Favre at the Swiss Federal Institute of Technology which concluded that cellular telephones could contribute to Colony Collapse Disorder (CCD). His experimental method involved placing a phone under a beehive, and noting that the bees buzzed more loudly when it received a call.

These conclusions, as well as his experimental methods, have been widely derided in both the beekeeping and scientific communities: for example, he did not measure independently bees’ reaction to noise, radiation, vibration, etc., did not determine the likely exposure of bees to cell phones (speaking for myself, my hives do not have their own handsets) and did not actually link his results to occurrences or known patterns of occurrence of CCD.

But Dr. Favre’s report was picked up by TV news programs at ABC, CBS, CNN, and Fox; by newspapers and magazines around the world from Britain’s *Guardian* and *Independent* to the *Daily News*, *Science News* and *PC-World*.

We’ll be hearing about this one. Sigh.

Blaming all manner of phenomena on cell phones is just another instance of something people have always done when faced with complicated and important problems:

- Let’s find a quick and easily understandable explanation! and
- Let’s put the blame somewhere fast and in a place where we can do something easy about it!

All the real science about CCD points to complicated interactions that will require difficult adjustments. With variations in emphasis and number of factors each scientist considers relevant, these include the increasing number of pests which our rapidly globalizing culture has brought into contact with honeybees, unforeseen impacts of chemical exposures, industrial agricultural practices, the decline in the number of small scale (non-commercial) beekeepers, the stresses created by moving bees for commercial pollination, climate change, and even habitat loss.

It’s hard for me to believe, even if they are toxic to honeybees, that cell phone radiation can hold a candle to the potential damage done to bees by neonicotinoids and their peers. But it sure is easier to put your cell away than

it is to reorganize the scale and practice of agriculture necessary to feed 300 million people in the United States alone.

One of the first scientifically-based allegations connecting cell phones with CCD arose as a misunderstanding by the UK’s *Independent* (again!) of radio frequency (RF) research done at the University of Landau (Germany) in 2006. Cell phones are not RF devices.

A June 2010 study out of Panjab University (India) powered up cell phones within hives for 15 minutes twice a day, and claimed that the hives in question stopped producing bees and honey. The scientists analyzed a total of four hives (two with phones and two controls). This data set mirrors the 50% losses found in many apiaries, with and without cell phones. It’s also too small a sample to prove statistically reliable. While many of us agree that exposing bees to any kind of magnetic field or radiation is no good thing, the fervor with which the public adopts this explanation and excludes harder-to-address phenomena is actually a barrier to improving honeybee health. Instead of finding the first, most comfortable conclusion—and one within an individual’s control—a more complicated, multi-person, multi-discipline kind of cooperation must be forged.

When we speak to the public about CCD, we should tell them not to worry about their cell phone, but to consider what they pour on their lawns or plant in their gardens. They can choose to support CCD research when talking to political leaders, and to allow small scale beekeeping in their communities. And they can join the conversations about what to do next!

