MARYLAND STATE BEEKEEPERS ASSOCIATION

The Beeline

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Highlights:

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President's Message

by Toni Burnham

One of the most gratifying things about this newsletter that it had to be two pages longer, because so many of you are involved in so many projects and activities. Folks like Carol Link, Allen Hayes, Tim McMahon, Lindsay Barranco, and Katy Evans have filled these pages, usually with opportunities that you can join in! Thank you!

Another short article also deserves your attention: after 32 years, Jerry Fischer is retiring as MDA Bee Inspector on June 30th. We will honor him at our June Meeting, and hope you will join us to do so.

That June meeting also features the only beekeeper we know who had a character named after her on *The X-Files,* and whose research and scientific literacy work makes her way cooler than even that. Please make time to hear Dr. May Berenbaum on June 14 *(Pages 3-4).*

The first half of 2014 was also full of helping hands that didn't write articles! Since January, MSBA has been working on the linked projects of getting the ETO Chamber into our possession, making it street legal, and readying it for renewed service. David Clark spent days helping tow it from inspection station to DMV to home again, lending us his trailer hitch, his capable electrician skills, and his ability to recruit folks like welders to perform needed repairs. The chamber is now in the dedicated hands of Bob Crouse, who is looking after paint and old parts that need replacement, and is connecting with experts in tank inspection and certification. Our goal is a renovated and certified tool that will be operated under contract to us by a professional applicator. Before that, we will be working with folks in State Government and the EPA to get renewed access to ETO.

And other organizations have reached out to us! We are on the verge of a renaissance at MAAREC, a multi-state resource for research and education, and are supporting their development of *BeeAware (see Page 11),* as a fully functioning app designed to assist beekeepers in diagnosing and managing diseases, parasites and pests. They are reaching out to member organizations to fund this effort, and MSBA will soon be writing to each MD Club with an offer to match local contributions to the project. We will also be writing to you about the Maryland Farm Board, and introducing you to your local MFB reps, perhaps getting you all into the same room as speakers and participants in each others' local events. We are already working side by side, we might as well work together.

Working with you all so far this year has been rewarding and inspiring, and so much more is yet to come. Thank you!

News from the Apiary Inspection Office

F*rom Jerry Fischer, State Apiary Inspector, MDA*
Phone: 410-841-5920, Fax: 841-5835, Cell: 410-562-3464, Jerry.Fischer@Maryland.Gov

Dear Beekeepers and bee friends: I am retiring from the Maryland Department of Agriculture (MDA) position as State Apiary Inspector on June 30, 2014. I started as a contractual inspector in 1982 and have been with the department to present. I was assigned as state apiarist on October 2, 2002. 32 years service.

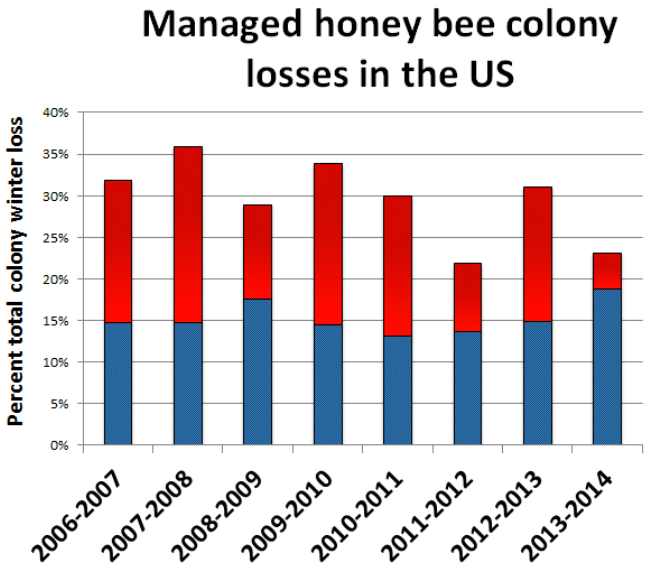
I have enjoyed working with the beekeepers of Maryland. I was pleased to have the support of all the beekeepers and local assoc's in the past years. The Maryland Department of Agriculture is very aware of the importance of beekeeping for our State's agriculture. They are committed to the promotion of beekeeping through education and apiary inspection services. Until a replacement for the position in filled, please contact your regional inspector.

I have not left the beekeeping world. I remain a beekeeper and a member of many associations.

ENJOY YOUR BEES!

Preliminary Colony Loss Report 2013-14

The Bee Informed Partnership has released preliminary results for the eighth annual national survey of honey bee colony losses. For the 2013-14 winter season, 7,183 beekeepers in the US responded, managers of managed 564,522 colonies in October 2013, representing 21.7% of the country's 2.6 million colonies. 23.2% of managed honey bee colonies in the U.S. died. The 2013/14 winter colony loss rate of 23.2% is 7.3 points (or 23.9%) lower than the previous years' (2012/13) estimate of 30.5% loss, and is notably lower than the 8-year average total loss of 29.6% .



UPCOMING LOCAL EVENTS

VA Beekeepers Assoc. Spring Conference, June 13-14, Lynchburg, VA, Dr. Jamie Ellis and Steve Repaskey, keynotes. *www.virginiabeekeepers.org*

Maryland State Beekeepers Association Spring Meeting, June 14, 2014, 8:00 AM to 4:00 PM, University of Maryland/College Park, Chemistry Building.

WV Beekeepers Assoc. Fall Meeting, September 19 and 20, Jackson's Mill – Weston, WV, *www.wvbeekeepers.org*

MSBA Annual Honey Harvest Festival, September 20, Patuxent Research Refuge Nat'l Wildlife Visitor Center, Laurel. ***Please volunteer! mail@mcdanielphotography.com***

PA State Beekeepers Annual Conference, November 14-15, Best Western Inn/Country Cupboard, Lewisburg, *www.pastatebeekeepers.org*

Maryland State Beekeepers Association Fall Meeting, Elections and Honey Show, November 15, 2014, 8:00 AM to 4:00 PM MDA, 50 Harry S Truman Parkway

Other Upcoming Events:

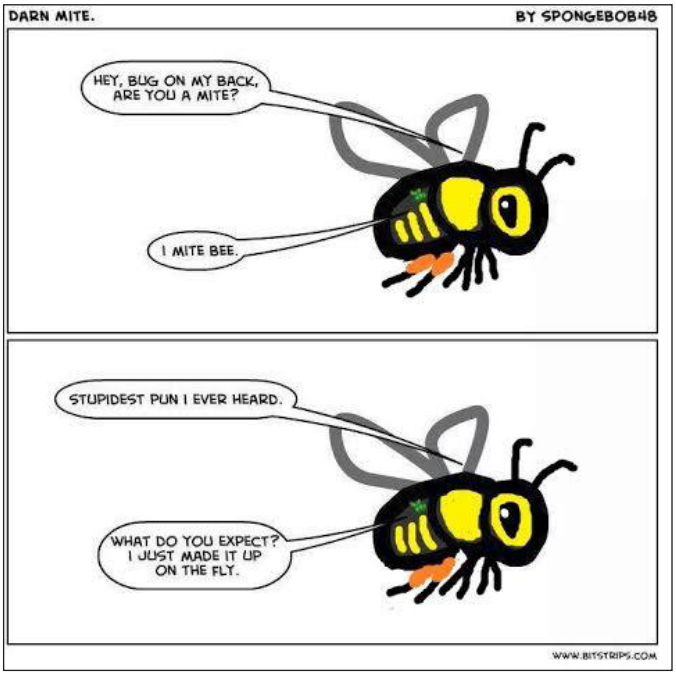
Pollinator Partnership Pollinator Week, June 16-22, *pollinator.org/pollinator_week_2014.htm*

Heartland Apicultural Society Annual Conf., July 10-12, Southern Illinois University, *www.heartlandbees.com*

Eastern Apicultural Society Conference and Short Course, July 28-August 1, 2014, Eastern Kentucky University, Richmond, *http://www.easternapiculture.org/*

NYC Honey Week, Sept 8–14, week of honey-centered events culminating in day long "Honey Fest." https://www.facebook.com/nychoneyfest. Vendor slots avail, contact *steve@theARTcorps.com*

American Beekeeping Federation (ABF) Conference, Anaheim, California January 6-10 2015.



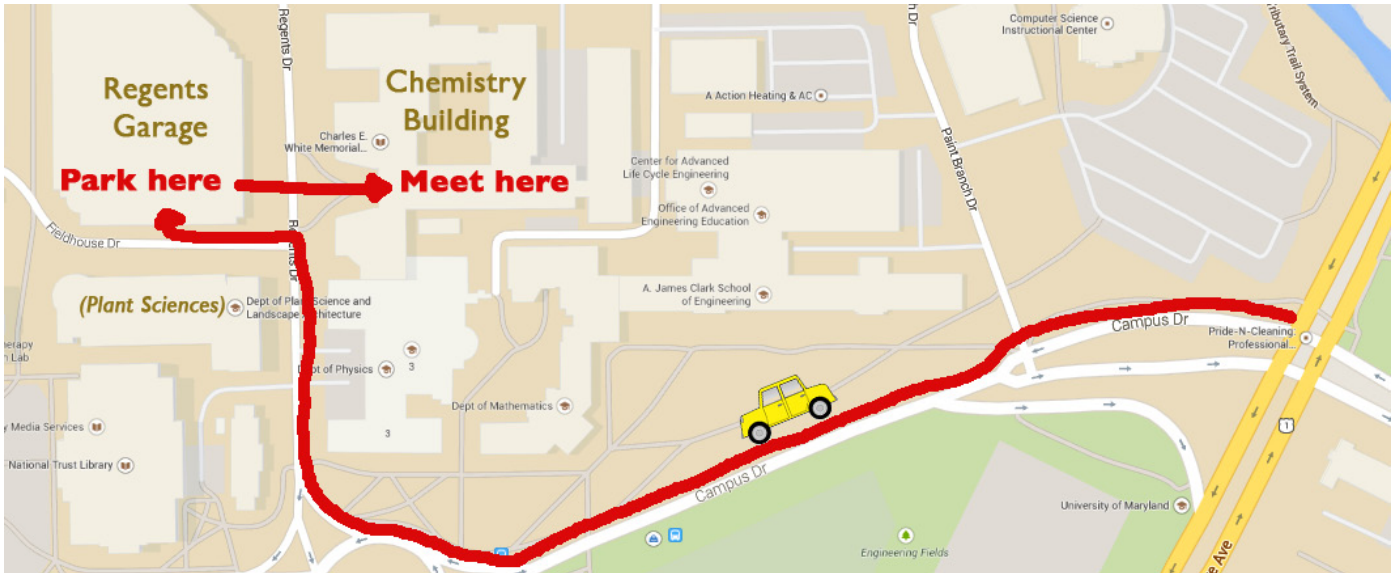
Maryland State Beekeepers' Association Spring Meeting, June 14, 2014
Chemistry Building Lecture Hall A/Room 1402
University of Maryland/College Park

8:00 am	Refreshments, Coffee, Donuts, etc.	
9:00 am	Opening and Welcome	Toni Burnham, President
9:15 am	Maryland Apiary Inspector's Report	Jerry Fischer, Maryland State Inspector
9:30 am	Beekeeping Regions of Maryland: The Mountain Region	Jerome "Hop" Cassidy, MD Bee Inspector
10:15 am	Using Neomatodes to Battle Small Hive Beetles	Izzy Hill, Dir., Center for Urban Bee Research
11:00 am	Applied Bee-Nomics: Can Science Save the Honey Bee?"	Dr. May Berenbaum, University of Illinois Urbana-Champaign
12:00 noon	Lunch	
1:15 pm	Strategy and Management of Efficient Honey Bee Pollination	Dean Burroughs, EAS MB, MD Bee Inspector
2:15 pm	Honey: Superfood for Bees and People	Dr. May Berenbaum, University of Illinois Urbana-Champaign
3:15 pm	Ask Expert Beekeepers Your Anonymous Questions	Panel Discussion
4:00 pm	Adjourn	Toni Burnham, President

Directions to the University of Maryland Chemistry Building

UMD/College Park is on Route 1 south of the Capital Beltway (495), take exit 25B. For GPS, please enter the address 7950 Baltimore Avenue, College Park, MD and follow directions to the **Chemistry Building.** More info http://www.cvs.umd.edu/visitors/maps.html . The Main Entrance is at iCampus Drive and Paint Branch Parkway.

Please note the different building for this meeting! Once inside the gate, keep left on Campus Drive until the traffic circle with the large "M" logo. Take first exit. Go to the first intersection; then make a left and an immediate right turn into the Regents Parking Garage. You may park in any UNNUMBERED spaces on the 1st floor; parking is free in unnumbered spaces only! Walk left out of the garage and the Chemistry Building is across the street



Spring 2014 Meeting to Feature Reknowned Entomologist and Bee Advocate Dr. May Berenbaum

Dr. May R. Berenbaum is Professor and Department Head of the University of Illinois Urbana-Champaign Department of Entomology, and an international leader in the field of entomology and apiculture. Berenbaum is interested in the chemical interactions between herbivorous insects and their hostplants, and the implications of such interactions on the organization of natural communities and the evolution of species. In addition to her research, she is devoted to teaching and to fosteringscientific literacy.

Dr. Berenbaum serves as Vice President of the Entomology Society of America and is the author of many books, including *Buzzwords: A Scientist Muses on Sex, Bugs, and Rock 'n' Roll; Bugs in the System: Insects and Their Impact on Human Affairs;* **and** *The Earwig's Tail: A Modern Bestiary of Multi-legged Legends***.**

We are lucky to welcome a scientist who represents such a dynamic bridge between the world of cutting edge- and citizen-science, as well. She is the founder of BeeSpotter, a partnership between citizen-scientists and the professional science community designed to educate the public about pollinators by engaging them in a data collection effort of importance to the nation.

She is also the founder of the Insect Fear Film Festival, which has been held annually at the U of I since 1984, and even inspired a reincarnation of herself as the character Bambi Berenbaum in "The X-Files."

Dean Burroughs has kept bees for the past 30 years, and is a commercial beekeeper managing 450 beehives. Dean is a Certified Master Beekeeper, Maryland State Apiary Inspector (Department of Agriculture), and Past President of theMaryland State Beekeepers Association! These days, he rents bees to pollinate strawberries, and vine crops for local farms, and recently was the founder and Past President of Lower Eastern Shore Beekeepers Association, www.lowershorebeekeepers.org.

Izzy Hill is the Director of the Center for Urban Bee Research where she runs Bugonia, an online citizen science platform where beekeepers can participate in honey bee research. Her current research focuses on the efficacy of beneficial nematodes for the control of small hive beetles. She has also created a method that beekeepers can use to rear nematodes with everyday materials as a way to reduce the cost of this biocontrol, making it an affordable and feasible IPM measure.

Honey Regions of Maryland: Did you know that Maryland is divided into four distinct honey producing regions? They are the Mountain Region, the Cumberland Valley Region, The Tulip Popular Region and The Eastern Shore Region. Starting with this meeting we will begin a series of talks describing these unique regions. First up is the Mountain Region consisting of Garrett, Allegany and the westernmost part of Washington Counties.

We are honored to have Mr. **Jerome "Hop" Cassidy,** MDA Bee inspector and longtime beekeeper come down from the mountain and tell us what keeping bees is like in Western Maryland. I believe you will be surprised! Hop is a frequent public speaker who may, by now, have spoken at every library, school, and state park west of Montgomery County (and a few there, too). Hop currently runs 10 to 15 hives, but also supports a number of beehavers and a youth beekeeper program. He is a past County VP for MSBA and is currently acting president of the Appallachian Beekeepers Association.

EAS 2014 at Eastern Kentucky University

by Timothy McMahon

Would you like to take part in one of the most extensive beekeeping conferences in the US? EAS (Eastern Apiculture Society) is one of the largest noncommercial beekeeping organizations in the US and the world. Every summer EAS conducts its week long Annual Conference of lectures and workshops in one the 26 member states or Canadian provinces. This year's conference will be held at Eastern Kentucky University in Richmond Kentucky, July 28 -Aug. 1, the theme is "Esprit de Bee". Usually 600 to 800 beekeepers from around the world attend.

The conference is made up of the Short Course, running from Mon-Wed-, and the conference-, running from Wed-Fri, with Wednesday the overlap day. Normally about half of the attendees stay the whole week with the other half coming just for the conference.

The Short Course has classes for all levels and special events such as an open apiary with Langstroth, Warré and Top Bar Hives, a microscope workshop on anatomy, a Honey Show for your bee products, and classes on all aspects of beekeeping. The conference will consist of a talk about beekeeping in Afghanistan by Lt. Colonel B. Richardson, social events, symposia and lectures by some of the biggest names in beekeeping like Dewey Caron, Mike Palmer, Dianna Sammataro, Jennifer Berry, Cindy Bee, Wyatt Magnum and Maryann Frazier. Along with this, there are about 35 workshops on topics such as Queen Production, mead, Nosema, Apitherapy, Varroa mite biology, Small Hive Beetles, quilting with a honey bee theme and many more. You can tour a local Walter T. Kelley's Co. store or a surface and underground coal mine with an EAS group!

I first attended EAS several years ago in Boone NC, and the experience was so great that I am now a life member. I've not missed an EAS conference since. Every year I go with a set of questions that I then try to put to the best minds in Beekeeping. Can't get much better than that.

Maybe the best thing about EAS was that I got to talk "bees" all week and no one said they'd heard enough (normally my family asks me to shut-up after the first 2 minutes or so). You can find out all about the specific topics and sign up at http://www.easternapiculture.org/. I hope to see you there. EAS 2015 is scheduled for Ontario, Canada at the University of Guelph. Come and join the fun!

A Night At The Museum

by Allen Hayes

Just when you think you have heard of everything to do with keeping bees, you learn there is a museum that contains exclusively bee stuff! This specialized museum is housed in three small basement rooms in a building at the Ohio Agricultural Research and Development Center (OARDC) in Wooster. While not officially open to the public it can be viewed during special times and occasionally by appointment.

On Friday February 28, I had the good fortune to visit the Beekeeping Museum and the Pollinarium, an exhibit emphasizing the importance of all pollinators. I have been to the museum previously, but this year the honey jar, bottle, and container exhibit was displayed for just this occasion. Two Ohio beekeepers, Jim Thompson and Dave Heilman own most of the items; the rest belong to OARDC. These two have a keen eye for anything related to keeping bees and over many years assembled an unbelievable collection of old equipment. Jim Thompson is a well-known honey judge and he said that judging honey in different containers led him to begin collecting; Dave Heilman owns Ohio Honey Farms in Wooster.

Most containers on display were honey jars but some just looked like they contained honey but didn't. These may have been for soft drinks, cooking sauces and even booze. All are empty now. The most expensive bottle came from Australia and cost $165.00. We are all familiar with plastic honey bears but have you ever seen a glass bear? Jim's collection even has those. Still other containers originally held honey as one ingredient in an elixir for problems like sore throats, colds and other ailments.

A lot of the containers had text embossed in the glass. Jim told me it took him three hours to set up the bottle display and about that long to pack up after the event.

One room holds old extractors of every size and configuration imaginable. Another room has more types of hives than one ever thought possible. Many of these hives are over 100 years old. Some were designed before the discovery of bee space, some after. Still others appear to have been designed *in spite* of the discovery of bee space. There are smokers, queen cages, shipping packages,

Continued next page, photos page 12

OARDC Beekeeping Museum and Pollinarium, Continued From Page 5

hive tools and you can even see a foundation press that was used by the A.I. Root Co back in the days when they produced beekeeping equipment. As complete as this collection seems to be, be mindful of the fact that much of it was stored in a barn leveled by a tornado in 2010. Countless items from beekeeping's past were lost.

How did I come to be in Northeastern Ohio in the dead of winter? I was there to attend The Annual Spring Beekeeping Workshop put on by the Tri-County Beekeepers Association, Inc. This legendary event is held at the OARDC on a Friday night and Saturday in early March every year. Some of the local clubs in Ohio send a busload of beekeepers to this event, the largest meeting of this type in the US. Many of you will know this location as the facility where Dr. Jim Tew spent his career. Jim is still connected with the OARDC and often makes presentations at this event. Today Dr. Reed Johnson conducts bee related research at the OARDC.

There are three tracks attendees of this event can choose to follow. One track is for kids, a second track is mostly beginner classes and the third is advanced. Like EAS and other large conferences, you can pick and choose which talks you wish to attend. All of the large national vendors attend. Companies such as Dadant, Mann Lake, Brushy Mountain, Betterbee, The Walter T. Kelley Co, and many more have booths set up.

This year registration was limited to the first 1000 people as the building can only hold so many. To put the attendance in perspective, the Eastern Apicultural Society (EAS) annual conference considers 750 attendees to be a phenomenal turnout and their event lasts 5 days! A keynote speaker is always included Friday night for those who arrive in town and register early. Most of the vendors are open Friday night also. Not all 1000 attendees were there Friday night and only a small number of the Friday night folks went to the museum.

The area around Wooster Ohio is home to a very large Amish community and in case you have been living under a rock, the Amish are superb cooks and bakers and often sell their products at farmers markets and the like. So for the breaks huge sheets of sticky buns baked by the Amish were cut into humongous size servings. They were unbelievable! There was also an abundance of other snacks, coffee and drinks as well. This is an extremely well organized event requiring an army of volunteers from The Tri-County Beekeepers Association to make things run smoothly. The dates for the 2015 workshop are March 6 and 7.

"Bees on Farms" in Development; Feedback Wanted

by Lindsay Barranco

"Bees on Farms" is an opportunity to match Maryland beekeepers with farmers who use organic/nearly organic and sustainable practices. It's a chance to answer many of the challenges facing our beekeepers.

The problem? There are approximately 1,821 registered beekeepers in Maryland (end-2013). We range from backyard beekeepers with 1-2 colonies to commercial beekeepers that have 25-50 or more colonies used for migratory pollination or honey and hive product sales. Most beekeepers of us keep 4-5 hives or less. We are required to register their colonies with Maryland Department of Agriculture so data can be kept on colony deaths, and to monitor and mitigate honeybee diseases and pests. Many are members of the state, local or regional beekeepers association. Many begin keeping bees by taking a "short course" that covers hive management, honeybee biology and how-to care. The difficulty is that bees are increasingly susceptible to pesticide exposure (i.e. neonicotinoids) or do not have adequate forage, especially in the summer. An additional challenge is that beekeepers often do not have the space to keep bees on their own properties and need a safe place for their hives. On the farming end, there are many farms in Maryland, both urban and rural, that use organic or sustainable methods. These small-scale farmers are dedicated to the use of organic (or close to organic) and sustainable farming methods. Oftentimes they spend long hours managing and working their farms and don't have time or desire to keep bees, yet their crops would benefit from having them present for crop pollination.

The idea behind "Bees on Farms" is to match beekeepers and farmers, so the former find a place to keep hives and so farmers can have pollinators on their property.

How to link farmers and beekeepers?The idea is to bring together two organizations (and perhaps more in the future) namely, Future Harvest – A Chesapeake Alliance for Sustainable Agriculture (www.futureharvestcasa.org) a non-profit organization of small scale sustainable/organic farmers and the Maryland State Beekeepers Association (www.mdbeekeepers.org) in order to link their respective members. Both organizations have websites and are planning to add links to announce "farm land available for bees" or "bees/beekeeper available for your farm" on each website via a bulletin board. Each organization could also be helpful in getting the word out to their membership by emailing "fliers" about the initiative. We are interested in feedback from members who would be interested in participating! Please email *lbarranco@comcast.net* for more information.

Citizen Science Field Study 2014: Integrated Pest Management

Katy Ciola Evans & Dr. Deborah Delaney
University of Delaware

A project testing IPM techniques in the field is underway for the 2014 season, and local beekeeper participation is a key component in identifying the tools and methods to boost honey bee health. We are seeking your participation in this project! As pesticides are becoming less effective there is a need to explore alternative beekeeping management strategies. There are many methods of varroa control, but none alone have been successful at preventing the buildup of pests and diseases while increasing the long term survival of a colony. I am focusing my efforts in the mid-Atlantic region. The baseline data that I am collecting from this study will assist in developing a final program that will be useful to beekeepers throughout the region.

"Integrated pest management" (IPM) is a widely known concept throughout agriculture and is commonly used for pest control in urban and agricultural environments. IPM is a multifaceted approach to pest management that combines biological, cultural, mechanical and chemical tools into a program that will reduce pests while decreasing the use of chemicals.

Recent dramatic declines in honey bee colonies has shown to be an accumulated result of multiple factors including chemicals, limited nutrition and environmental conditions, small hive beetles, tracheal mites, varroa mites, viruses, fungi and bacterial diseases. An accumulation of these stress factors weakens a colony and makes it more vulnerable to pests and pathogens, particularly Varroa destructor, and associated viruses. There are many cultural and chemical varroa control tactics that are practiced in beekeeping, but few have yielded long term success. Consistent annual losses in honey bee colonies has created a strong interest in developing alternative approaches to apiary management that are accessible to the public.

A chemical approach may be necessary but IPM focuses on monitoring a pest's population and foregoing chemical treatment until a pest threshold or a specific pest's population level is reached. Our goal is not to eradicate varroa because they are here to stay, but to maintain varroa at sustainable levels and prevent them from reaching their threshold. Once varroa reach their threshold they are considered damaging to a colony and the colony has a difficult time recovering. Monitoring pest levels is important in determining pest levels, and also in determining when to treat with miticides.

The goal of my project is to build an IPM management program to decrease varroa and varroa-vectored viruses

Pyramid of IPM Tactics

that incorporates not only the cultural and mechanical methods of varroa control but also colony behavior, specifically splitting colonies and using mite monitoring techniques to dictate when to use miticides. Our hopes are that by using various non-chemical control methods we will be able to reduce chemical treatments.

In recent years, research has noted strong correlations between natural swarming behaviors of honey bees and the long term survival of honey bee populations accompanied with parasitic pressures of varroa mites. Swarming is an acquired evolutionary technique in which colonies reproduce while indirectly reducing pests and diseases. Research has supported the development of the co-existence of the European honey bee and varroa among feral and isolated apiaries. A split (i.e. an artificial swarm) is the division of one colony into two colonies resulting in the parental colony and daughter colony. It is predicted that long term effects of splitting colonies will result in the development of a stable co-existence between the host and parasite (bees and mites) in managed colonies. The goal here is to become sustainable beekeepers. Colonies will still be lost each season due to viruses, pests, weather or a combination of stressors, but by splitting colonies you will be able to increase and keep sustainable numbers of colonies in your apiary.

I am using varroa control methods that are familiar to the beekeeping community, for example drone brood removal, screen bottom boards, splitting of colonies and hygienic stock selection. The long-term goals of this project are 1). To better understand the relationship between varroa and honey bees 2). To provide a basis for sustainable apiary management and 3). To understand how splitting and swarming affect the population dynamics among varroa mites, varroa-vectored viruses and honey bees. To learn more and to participate, please visit *http://bugonia.com* or email *kciola@udel.edu*.

Maryland Beekeepers Study Local Honeybee Nutrition

By Carol Link

Historic agricultural practices coupled with the recent pace of urban expansion in Maryland have contributed to the dramatic loss of suitable plants for honeybee forage. Along with other threats, such as exposure to pesticides and invasive parasites, compromised nutrition has resulted in unprecedented colony losses. Maryland Beekeepers are acutely concerned and consequently have formed a volunteer task force to work with the National Resources Conservation Service to directly address the issue of honeybee nutrition with the state.

The first collaborative workshop took place at the National Plant Materials Center in Beltsville on March 13, 2014 with 27 beekeepers attending. It began with a symposium lead by Master Beekeeper Dr. Wayne Esaias, Resource Conservationist, R. Jay Ugiansky and Horticulturist, Shawn Belt.

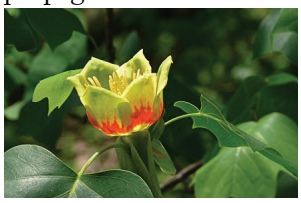
The discussion highlighted the notable pollen and nectar plants in Maryland. The unique honeybee trait we know as "flower constancy" makes it critical that sources in bloom be present in abundance. Unfortunately, with the trend away from leaving hedgerows around fields, plus the out of control deer population and reckless suburban development, the task of planting and maintaining nectar rich trees and meadows is not insignificant.

The richest nectar producing tree species include the Tulip tree *(Liriodendron tulipifera)*, Linden *(Tilia americana)* and Black locust *(Robinia pseudoacacia)*. About 8 years ago three cultivars of Black locust were planted at the National Plant Materials Center in Beltsville and released to other areas as alternatives to the ornamental cultivars available commercially. To date, vigor, growth rate and resistance to locust borer have been the object of the NRCS studies. Our involvement in the studies will be to assess botanical characteristics such as bloom dates, length of bloom and nectar secretion.

Tilia americana

Robinia pseudoacacia

Honey from Black locust is light in color. Based on this observation beekeepers have become aware that black locust is the foraging species of choice. One possible reason for the switch to black locust is that it is an early successional species popping up along our many highways and on land newly cleared for development. Black locust is fast growing, flowering at 6 years and living to about 90 years. The species is capable of fixing atmospheric nitrogen allowing it to grow in poor soils. The nitrogen fixing quality also benefits other nearby trees. Because it establishes quickly and has an extension root system, it helps control erosion. The root characteristic was evident to us when we were able to easily dig and cut long sections of lateral roots for propagation!



Liriodendron tulipifera

The Tulip tree produces a classic dark amber honey. The trees live upwards of 330 years and produce their first flowers at 15-20 years. Flowering lasts from 2 to 6 weeks depending on the age and size of the tree. Linden honey has been described as the best in the world, almost clear to amber in color and very aromatic sourced from creamy white blooms in June-July. The Linden is well suited for landscape design along boulevards, in parking lots and commercial buildings because of its stature, shade and aromatic flowers.

The National Resources Conservation Service was mandated to "help farmers help the land." NRCS came into existence after the dust bowl with the goal of conserving the soil. In Maryland today grassland and meadow habitats are at significantly low abundance. The little that exists is found along power line right of ways, highway medians and military bases with open land management practices. So in addition to planting trees, concerned beekeepers can look to the planting of meadow lands.

Wildflowers are important for honeybee nutrition and vast plantings with abundant bloom are needed to attract the foraging honeybees' attention! The Xerces Society is a valuable source of information on wildflowers for pollinators.

Before diving into wildflowers, it is worth knowing about a couple of native shrubs. First, the evergreen Inkberry *(Ilex glabra)* has a white bloom in May-June and works as a landscape shrub or hedgerow.

Ilex glabra

Winterberry *(Ilex verticillata)* also blooms in May – June with ornamental berries in the winter. It is a great landscape option to replace the highly invasive, noxious, non-native and all too present flame bush. Another interesting honeybee favorite is the deciduous, thorny shrub called Devil's Walkingstick (or as I prefer Angelica Tree, Aralia spinosia). It offers white blooms in mid to late summer providing pollen and nectar to honeybees.

How can we convert land into meadows? There's helpful information at Ernst Conservation Seed (www.ernst-seed.com). The most challenging aspect of establishing meadows is dealing with invasive and aggressive vegetation. Good weed control before planting may require repeated tilling to achieve the necessary seed to soil contact and sunlight penetration. Another crucial factor is careful observation of seed growth and weed competition with prompt removal of weeds from developing seed beds. Mowing at a six inch height the first year is recommended since native plants have more extensive roots than tops and this will allow in sunlight. Be careful never to mow too close (never use a lawn mower) since this encourages weed grasses! By the second year plan to mow once in the early spring, allowing birds and wildlife to enjoy the native site for food and shelter all winter.

Collaboration is a great way to tackle problems. The problem we face is ensuring adequate honeybee food sources in Maryland. Our area of expertise is the honeybee and her habits so it makes perfect sense for us to work cooperatively with those whose specialty is plants. Meeting with the conservationists and horticulturists at the National Plant Materials Center was profitable, and we look forward to working together to accomplish shared goals.

Beekeepers are interested in knowing what can honeybees forage during the Maryland summer dearth. Here are some suggestions:

Butterfly Milkweed *(Asclepias tuberosa)* – abundant nectar, July-August bloom, orange flower, 1.5-2', also *A. incarnata, A. syriaca*

Wingstem *(Verbesina alternifolia)* – August-October bloom, yellow flower, 4-8'

Aromatic Aster (*Symphyotrichum oblongifolium)* – prettiest native aster, aromatic flowers, not leggy September-November bloom, purple flower, 1-2'

Spotted Bee Balm *(Monarda punetata)* – okay in poor, dry soil, 2-4'

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If your dues are not current, please pay them at the next meeting or mail to: MSBA Treasurer, Robert Crouse, 1606 Dogwood Lane, Bel Air, MD, 21015. Note: we will only accept dues payments for a single year.

THE BEELINE
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318 12th Street NE
Washington, DC 20002

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Can we have your address?

MAAREC Meeting and Project Proposal

On April 18, Dr. Deb Delaney of the University of Delaware hosted a meeting for representatives of the state beekeepers associations, Depts of Agriculture, and State Universities of member states–as well as others interested. MAAREC has been an important, but undersupported, resource for MidAtlantic beekeepers since 1997. With the proposal of the *BeeAware* project, MSBA is joining to help bring resources to the effort, which is especially important during these times of declining support to public and university apiculture and extension programs. To get information about MAAREC and its activities, please contact contact Maryann Frazier *(mfrazier@psu.edu)* in the PSU Dept of Entomology.

WellBeeing Expert System

Background

BeeAware, an early expert system, is a computer-based tool designed to assist beekeepers in diagnosing and managing diseases, parasites and pests. Our goal is to update the content and capabilities of this tool to enable its use by beekeepers in the field as a fully functioning app. This new expert system, *Well-Beeing,* will be developed for MAAREC in collaboration with Bruce Miller of *Rules of Thumb inc* (ROTCO). The old *Bee Aware* content will be updated by MAAREC members. Brue Miller will be responsible for designing the software based on the NetWeaver Runtime framework. The resulting app will use a new version of the NetWeaver Runtime framework modified to work on the additional delivery platforms.

Currently the NetWeaver Runtime platform exists on Win32 and Silverlight. Silverlight is a browser-based environment written by Microsoft using their .NET technology. Silverlight can be deployed on Windows and MacOS systems through a number of popular browsers. However, it cannot be deployed on iOS or Android which means it cannot be used on tablets. Additionally Microsoft has "orphaned" this product in that it has ceased development and will only maintain it for a few more years. So a different framework will be necessary to deploy the *WellBeeing Expert System* on tablets.

NetWeaver (the inference engine and deployment frameworks) is currently written in Object Pascal. As of this writing NetWeaver sources are compiled to Win32 (native code) via Embarcadero's Delphi and .NET (managed code) via RemObjects' Oxygene from a common Object Pascal code base. Embarcadero has expanded Delphi's platform capabilities in recent years to include MacOS, iOS, and most recently, Android using their FireMonkey framework. ROTCO has delivered a few non-NetWeaver applications using FireMonkey to Win and MacOS. The NetWeaver Engine has recently been ported to all four platforms, but the graphical user interface (GUI) parts have not.

Why native apps instead of HTML5 (in-browser application): The anticipated use of *WellBeeing* is in an apiary on a tablet computer. An apiary is not likely to have an internet connection due to its location and most tablets do not have cellular service to provide internet access.

Scope of Work

WellBeeing will be delivered on 4 platforms: Win, OSX, iOS, Android. The GUI will be optimized toward tablet use, but will also function well on desktops and smartphones. ROTCO will cost share - code that could possibly be repurposed to other projects - ROTCO retains IP rights to this portion ROTCO will create new GUI frameworks for each platform on its own and retain IP rights to this framework code. ROTCO will purchase test hardware on its own - 1 iPad Mini, and 1 Google Nexus 7. ROTCO already has Win and OSX hardware. ROTCO will review and update the logic and content of *BeeAware* (with MAAREC member assistance for content).ROTCO will build 4 apps (one for each platform) that embody the functionality of *WellBeeing*, incorporating updated logic and content.

ROTCO will deliver the apps via the appropriate method for the platform:

- Win - installer application
- Mac - installer package
- iOS - Apple App Store
- Android - Google Play Store

Budget

- Test Hardware - $710.20 (estimated)
- Framework development - 200hrs - $20K
- App development and deployment - 120hrs - $12K

Total Project Cost - $32,710.20

ROTCO cost sharing - $22,710.20

Balance needed - $10,000

Timing

GUI development and logic review and update will be done concurrently so that PSU can participate with content update early in the process. It will take about 4 months to complete, test, and deliver.

Anticipated delivery on 1 Sept 2014, based on an immediate start.

Past MSBA President Paul Dill Featured in Response to Interstate 95 Bee Spill

On Tuesday, May 20, a poorly loaded semi with 460 hives headed for Maine overturned on I-95 near Newark, Delaware, triggering the first time the state has used its bee emergency response plan.

State police spokesman Sgt. Paul Shavack says on-call bee handlers, inlcuding past MSBA President Paul Dill, worked with firefighters to spray water to disperse and calm the bees. It took more than 13 hours to clear most of the site.

In the midst of the usual press silliness about "swarms," killer bees, and apparently universal insect sting allergies, Paul repsresented both honey bees and their keepers extremely well. Quoting the reports:"They've been traumatized so they're pretty well upset now," said Paul Dill, one of the beekeepers."

According to Dill, the driver was transporting the bees to Maine to pollinate blueberries. Experts say about 90 percent of the bees were lost during the accident. Some news reports indicated that 10-20,000,000 bees may have been on the truck.

Hive owner Steven Eisele estimates the loss of each hive at $250 for gear ane bees and $150 for honey.

Photos From A Night At The Museum *(Page 5)*

by Allen Hayes

Containers that appear to be bee or honey related.

Several of the many old hives in the collection.

Jim Thompson describes his container collection.

Still more hives on display.

Native Plants for Summer and Fall Honey Bee Forage

Beekeepers in Maryland often have a shortage of nectar sources during summer and fall. Many native plants are excellent nectar sources at this time of year, but are often not very abundant. This nectar dearth can lead to aggressive bees and weak colonies going into winter. Planting bee forage can reduce supplemental sugar feeding, improve bee health and potentially allow for surplus honey production. The following native plants provide abundant nectar and/or pollen during the summer and fall and are also adaptable and easy to grow. These species are also very beneficial to native pollinators. Planting in full sun is recommended for the best growth and bloom.

Common Name	Scientific Name	Bloom Time	Height (ft)	Light Needs	Soil Moisture	Deer Browse	Notes
Inkberry	*Ilex glabra*	May-June	5-8	full-partial	mesic-wet	some	evergreen, spreads by roots
winterberry	*Ilex verticillata*	May-June	3-12	full-partial	mesic-wet	some	deciduous, spreads by roots/layering
Foxglove Beardtongue	*Penstemon digitalis*	May-June	2-5	full-partial	dry-mesic	some	seeds well
Hairy Beardtongue	*Penstemon hirsutus*	June-July	2-3	full-partial	dry-mesic	some	thrive on poor soil
Buttonbush	*Cephalanthus occidentalis*	June-July	3-8	full-partial	moist-wet	yes	will grow in flooded soil
Butterfly milkweed	*Asclepias tuberosa*	July-Aug	1-2	full	dry-mesic	some	prefer dry soil
Common milkweed	*Asclepias syriaca*	July-Aug	3-5	full-partial	dry-moist	some	can run aggressively
Swamp Milkweed	*Asclepias incarnata*	July-Aug	2-4	full-partial	mesic-wet	some	tolerant of moderately dry soil
Purple Giant Hyssop	*Agastache scrophularifolia*	July-Aug	3-6	full-partial	mesic-moist	no	long bloom season
Yellow Giant Hyssop	*Agastache nepetoides*	July-Aug	3-8	full-partial	mesic-moist	no	long bloom season
Giant Blue Hyssop	*Agastache foeniculum*	July-Aug	2-4	full-partial	dry-mesic	no	drought resistant
Spotted Bee Balm	*Monarda punctata*	July-Aug	1-3	full	dry-mesic	no	dislikes wet soil, long bloom season
False Sunflower	*Heliopsis helianthoides*	July-Aug	3-5	full-partial	dry-moist	yes	Spreads well by seed
Narrowleaf Mountain Mint	*Pycnanthemum tenuifolium*	July-Sept	1-3	full	dry-mesic	no	spreader, long bloom season
Whorled Mountain Mint	*Pycnanthemum verticillatum*	July-Sept	2-4	full-partial	dry-mesic	no	spreader, long bloom season
Virginia Mountain Mint	*Pycnanthemum virginianum*	July-Sept	1-3	full-partial	dry-mesic	no	spreader, long bloom season
Hoary Mountain Mint	*Pycnanthemum incanum*	July-Sept	3-4	full-partial	dry-mesic	no	spreader, very long bloom season
Clustered Mountain Mint	*Pycnanthemum muticum*	July Oct	2-3	full-partial	dry-moist	no	spreader, very long bloom season
Paleleaf Woodland Sunflower	*Helianthus strumosus*	July-Sept	2-5	full-partial	dry-mesic	yes	aggressive spreader, long bloom season
Flat-top Goldentop	*Euthamia graminifolia*	Aug-Sept	3-6	full-partial	mesic-wet	yes	aggressive spreader
Stiff Goldenrod	*Oligoneuron rigidum*	Aug-Sept	2-5	full	dry-moist	yes	other goldenrods are also excellent
Showy Goldenrod	*Solidago speciosa*	Aug-Oct	2-5	full-partial	dry-mesic	some	Tolerates poor dry soil
Sawtooth Sunflower	*Helianthus grosseserratus*	Aug-Oct	3-5	full-partial	mesic-moist	yes	lone plants up to 12', aggressive spreader
Wingstem	*Verbesina alternifolia*	Aug-Oct	3-8	full-partial	mesic-moist	yes	prefers moist fertile soil
Aromatic Aster	*Sympyotrichum oblongifolium*	Sept-Nov	1-2	full	dry-mesic	some	other asters are also excellent