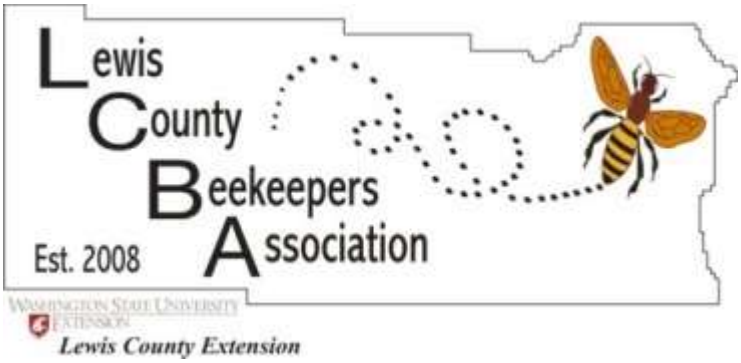

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November 2013 LCBA Newsletter

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Questions? Suggestions? Resources you'd like to share, stories you'd like to tell?

Please contact LCBA Secretary Susanne Weil: susanne.beekeeper@gmail.com or call 360 880 8130.

UPCOMING LCBA EVENTS:

November 13: Movie Night –"More Than Honey"

When: PLEASE NOTE SPECIAL TIME: Film starts 6:30 p.m.; social hour 6 p.m.

Where: 103 Washington Hall, Centralia College, 701 W. Walnut, Centralia WA

We hope you can join us for this new film about challenges facing bees & beekeepers worldwide, *More Than Honey,* which features spectacular footage of bees. It runs 90 minutes, & we'll have Q&A about the film, plus a brief business meeting, after a break at 8 p.m. No admissions charge, but we'll have a "suggested donations" can with an amount TBA (probably about $2). *To view the film's trailer, visit: http://vimeo.com/45684169. See the review by Dewey Caron in this newsletter, below.*

December 11, 7-9 p.m.: LCBA's 5th Annual (!) Holiday Potluck - for directions, contact LCBA's Secretary (Susanne.beekeeper@gmail.com; 360 880 8130)

Please mark your calendars for LCBA's 5th Annual Holiday Potluck and get ready to share good food, good fellowship, door prizes, & after dinner, a brief monthly meeting with our traditional Beekeeping Q&A. We'll discuss the question of ordering package bees, take your suggestions for 2013 speaker topics, and more.

Please Bring: A dish of food to share & a plate, cutlery, & cup to eat/drink from. Our venue has tables & chairs, 3 ranges, a refrigerator, & plug-ins for hot pots. LCBA will provide coffee, tea, hot chocolate, & napkins. ***Food Drive:*** If you'd like to bring canned food or dry goods for the Greater Chehalis Area Food Bank, please do – we'll have a donation box.

January 8: LCBA Monthly Meeting, 7 – 9 p.m., 103 Washington Hall, Centralia College
Social Time 6:30 to 7 – Come Talk Bees!

Topic: Yellow Jackets, Bald Faced Hornets, & Other Bee Predators
Speaker: Carl Roush, biology instructor, Lower Columbia College (retired)

Carl Roush captures yellow jackets & extracts their venom for scientific purposes; he's also an expert on hornets & wasps. His presentation will give us insights into the world of predator insects, including a slideshow and demonstration materials.

Business Meeting: Beekeeping Q&A. Also: monthly raffle.

February 12: LCBA Monthly Meeting, 7 – 9 p.m., 103 Washington Hall, Centralia College
Social Time 6:30 to 7 – Come Talk Bees!
Topic: TBA

March 12: LCBA Monthly Meeting, 7 – 9 p.m., 103 Washington Hall, Centralia College
Social Time 6:30 to 7 – Come Talk Bees!
Topic: Zombie Fly Parasitism of Honey Bees – University of Washington Research Project

Dr. Evan Sugden and his undergraduate research team – Ashley Powell, Hannah Dayley, & Fiona Kana – will share their work on how zombie flies are affecting honey bees in western Washington, plus information about UW's teaching apiary & ongoing Nosema research.

Business Meeting: Spring management Q&A. Also: monthly raffle.

LCBA's 2014 workshops (dates & places TBA) will include:

Building / Assembling Langstroth Hives

Building Top Bar Hives

Spring Hive Inspections

Making Splits from Local Survivor Bees

Colony Removals from Structures

Inspecting for & Addressing Bee Parasites & Diseases

Removing Honey Supers

Fall Management Issues

Honey Extraction

Above, Michaela, Terrie, & Kent spinning honey at our October 2013 workshop/party.

NOTES FROM LCBA'S October 9th, 2013 MONTHLY MEETING

Announcements: *if you bring a sample of bees in alcohol to a monthly meeting, Susanne or Gary will grind them up and make a slide for you; Gary will be bringing his microscope and Susanne the slide preparation materials. We can't scale your sample to determine the extent of infestation your colony faces, but we can at least let you know what your bees are battling.*

Program:

LCBA President Norm Switzler kicked off the meeting with an overview of our agenda. Norm noted that VP Dave Gaston was not here because of a family emergency and so would not present his simpler top bar hive design tonight, but would be interested in leading a top bar building workshop early in 2014 if members wish it. A show of hands suggested that the answer was an enthusiastic "yes."

First Speaker: Mike Helms: Foundationless Beekeeping

Norm noted that as a movement, foundationless beekeeping is catching on. Several members are planning to try this in spring 2014. Meanwhile, first year beekeeper Mike Helms has already started and brought excellent photos to illustrate how foundationless beekeeping works. Mike noted that this is his first stab at public speaking, other than funerals and Amway presentations. Mike had bought a nuc that did not build up quickly; he added feral bees from a June carve-out in hope of readying the colony for successful over-wintering, but still, buildup was slow. In August, Mike heard about foundationless beekeeping at LCBA's monthly meeting and then was inspired by Dave Gaston's top bar display at the Southwest Washington Fair: he then began an experiment as a last ditch effort to prepare this colony for winter. Mike noted that in an ideal world, foundationless beekeeping should start in spring.

Above, Mike with his suit as it looked before Norm got him crawling under buildings.

Let Bees Build the Comb They Want: Foundationless beekeeping appeals to Mike because it lets bees build comb to their own needs. Foundations are our approximations of what we think bees need. For example, foundations are solid, but when bees get the chance, they insert communication holes in comb, as well as ventilation. Bees wish to manage the microclimate of

their hive. Also, bees construct cell size to the specs of instinct: as Michael Bush noted at October's WSBA conference, commercial foundation cells are slightly larger than the size bees naturally build, and this may encourage Varroa mites to infest brood. Mike noted that he is only talking about the deeps – not supers – the upper deep, where bees were storing food, was where he situated his experiment. (In this context, Mike took off a layer of clothing to reveal his "meeting t-shirt," which reads: "give your bees the deeps!") Another advantage of foundationless beekeeping: comb honey!

Getting Started: To encourage bees to build comb on foundationless frames, Mike inserted a paint stick, hammered into the underside of the top bar of each empty frame: this gives bees a starting point for building, and he rubbed beeswax onto this bar to attract bees to build there. See the photo, below, that illustrates the insert:

Evidently the insert bar strategy worked: see the before and after photos, below:

Bees Building: Mike put 5 foundationless frames into the top deep box of his hive, "checkerboarding" these between frames with man-made foundation. First he would add one, then, a week later, add two more, then, finally, in week 3, he added the last two. All became drawn fully and bees stored ample honey in them. Mike added the upper deep box on August 13. A week later, he first saw newly built beeswax comb. The PDF file attached to this newsletter

mailing (and available on the "Monthly Meeting" link on our website) shows photographs spanning the entire 4-week process: each photo is labeled to show the bees' remarkable building progress and prowess. Mike noted that as it is hard to take pictures with one hand while holding a frame in the other, he had to create a stand and put the frame, with bees, on the stand just long enough to take the pictures. The stand appears in the photograph below:

Above, Frame #1, Week 4: note lovely honey arch & communication holes, upper right, lower left. Below, see frame 2, week 1, displaying clean, white, heart-shaped drawn comb; the frame is backed by a frame with man-made foundation for contrast:

A Valentine from Mike's Bees!

How can foundationless frames be inspected? Will the unsupported wax sag and break? Mike noted that this is an issue: to safeguard the tender new comb, one must hold it vertically to inspect, just as with a top bar hive. No flipping sideways, or gravity will break them! Gordon Bellevue noted that he tried foundationless, too, but wired a frame, after which bees built their

own comb around the wires, which helped anchor new comb. Another thing: one must level the hive to help bees build without the comb being tilted and stressed.

Feeding for foundationless buildup? Mike fed his bees two quarts per day of a 1:1 sugar/water syrup mix to stimulate them to make wax. He added some honey to the mix, as well as Honey-B-Healthy. He wanted to avoid the "empty calorie problem," or at least to mitigate it.

Can bees build brood comb in a foundationless setting? Yes: after all, that's how bees survive in the wild. All carve-out retrievals start as foundationless: we skewer the comb into frames with bamboo skewers and toothpicks. Norm noted that one of his carve-outs didn't build off nuc frames given them, so he checkerboarded the vacant nuc frames with carve-out comb that had gaps between pinned in comb: the bees immediately started filling in the gaps, suggesting that bees may actually prefer to build their own comb. Norm noted that when you scrape off burr comb that they build below, they'll keep building it back: just when you think you have bees figured out, they show you Plan B, and it's their plan, not yours. Mike's read if you put empty frames in the lower deep, between built frames, this will achieve the fastest build-up.

How does foundationless beekeeping affect honey production: Mike was asked what goal he has for honey production. Mike noted that this year, his goal was simply to help the bees build up adequate stores to survive the coming winter. At the start of August, this colony had virtually no stores: now they do, and are looking good to overwinter. Taking extra frames out didn't cost anything. Gary noted they won't cap sugar water, so they must have been bringing in some natural nectar. Mike said that he was not sure on what they foraged; all he knows is that they did take the syrup. Norm suggested they may have augmented their nutrition with the honey he gave them. Mike said he mixed honey in water, thinning it so they would continue to produce wax.

Norm commented that he finds foundationless beekeeping a fascinating prospect since bees produce their own wax, not sprayed on plasticell, not hailing from heaven knows where, containing heaven only knows what chemicals. We don't even know if there is a regulatory system among distributors to take out contaminated wax. All thanked Mike for his talk.

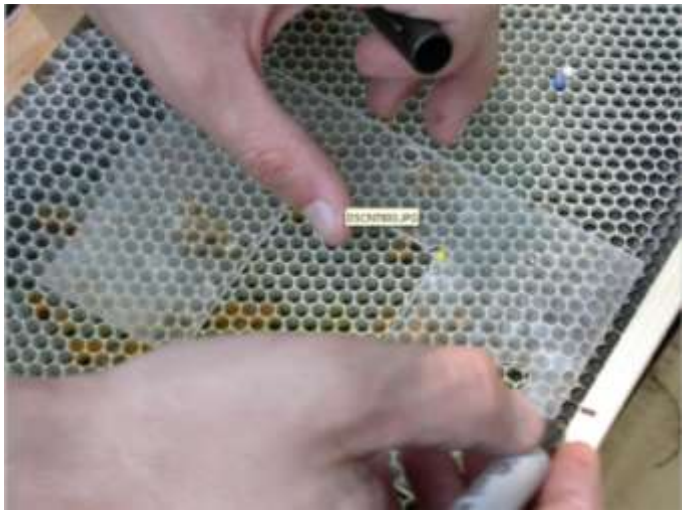
Speaker #2: Tomme Trikosko: The Broodmapper Project

LCBA member & Journeyman student Dr. Tomme Trikosko has a background in veterinary medicine and now teaches biology at Toledo High School, where her students describe her as the "search engine queen." In her travels around the Internet, Tomme found the Ohio State University "Citizen Science" program: researchers ask citizens to help them crunch data that they don't have hours and person-power to do. Any age group can participate in OSU's honey bee "Broodmapper" project, and Tomme wants to get high school students involved.

Dr. Reed Johnson is using Broodmapper to test miticide-fungicide interactions: how do the miticides we use interact with other environmental contaminants, including medications we use against American Foulbrood? We're concerned about drug interactions in people, so why not in bees? All drugs are toxins, but they are dose dependent. For example, people are given coumadin as a blood thinner: if the antibiotic Cipro is given, too, then a therapeutic dose of Coumadin can become lethal. The liver can only do so much detoxification at once: "that which does not kill you weakens you for the next blow." Now, how does this apply to bees? In one example, Apistan plus fungicide act like Coumadin plus Cipro: the therapeutic dose of Apistan

becomes lethal, and a beekeeper may not even know how the bees are getting the fungicide, or how much. What the beekeeper intended as a cure backfires.

What Dr Johnson did was set up multiple test colonies in cardboard nuc boxes: these didn't last long in bee season in Ohio, but proved good enough for the research process. He filled a feeder with plain syrup, dimethoate (an anticolinesterase), and Rally. Next, he added an Apistan strip, and set up a control hive that did not get Apistan. They looked for measurable effects on colony health: colony survival, dead bees, colony weight, brood area, survival and development of brood. (Tomme referenced a Plos One article by Wu et al.; more information is in the PDF file appended to this edition of the newsletter).



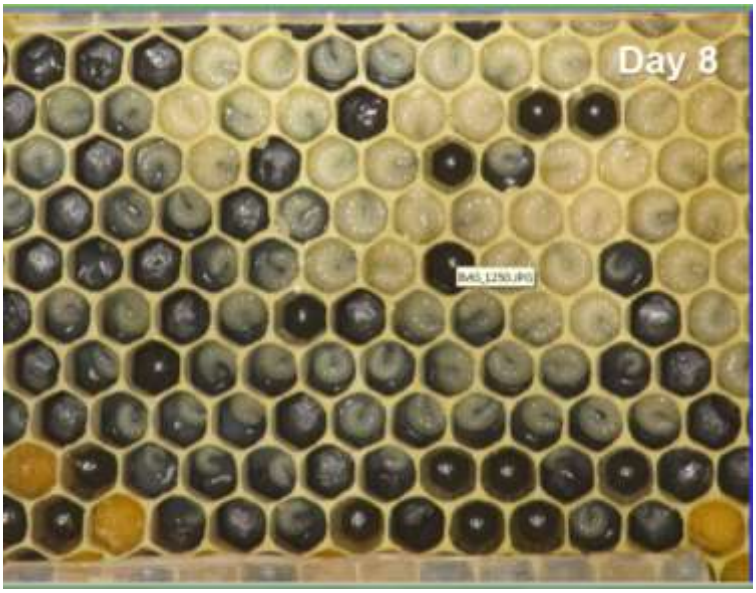
Above, card laid atop brood measures 120 cells precisely.

The next step was to examine the cells. The old way to examine cells was to circle them manually, but now they use a measuring card – see photo, above - that they set at same place on each frame, thus neatly measuring 120 cells. The card is anchored to the frame with color-coded push-pins so that when you are looking at a given photograph, you know the orientation of the brood. Dr. Johnson used a PVC- pipe camera mount to photograph brood in a uniform view. He then posted series of photos that follow the development of larvae of one generation of worker bees, from eggs all the way to their hatch-out: 45 colonies, 5 treatments, 3 images per colony, 360 cells, 12 visits, 1620 images, of 197440 cells. Of these, Tomme read 1560 photos to become the 5th top broodmapper of all time! She then made an avatar so that she could go in using a different username and capture more photos for her PowerPoint to show us at this meeting.

Anyone can volunteer to do this – and volunteer beekeepers benefit by honing skills in brood inspection, which will help with one's own colony inspections. Signing into the Broodmapper project is easy: simply create an account by giving an email, a username, and password, and then the site walks volunteers through a how-to tutorial, which explains how to score each photo, then thanks the volunteer "for joining the 'hive mind' to help honey bee research." When it's pouring rain in the dead of winter, you can do this at home; you can even put it on a split screen (Tomme watched the entire X Files series while brood-mapping).

The site notes specific data points which they need volunteers to analyze, pre-circled and labeled; the site also shows pollen, nectar, and capped honey. Volunteers face interesting

judgment calls: are you looking at pollen, or decaying larvae? Sometimes even Dr. Johnson has to guess. The world of data is all about the averages, though, so no citizen scientist should stress too much over the possibility mis-categorizing a slide.



Above, a sample slide for volunteer Brood-mapper analysis

Tomme's slideshow gave many examples of brood photos. For her, the biggest challenge was telling the difference between eggs and empty cells: eggs might be at the edge of the screen, or might just be a dot. There is an "invert" tool that helps you see eggs better by using photo negatives. The site lets you see sets of photos with different stages to help you decide what you are looking at; it also gives quizzes. Is it royal jelly or nectar they are swimming in? If unknown, you simply guess. Tomme noted that the photos she showed us are screen grabs, whereas the actual Broodmapper site is interactive.

Another fun challenge was categorizing "oddities," such as closeups of bee butts protruding from cells. One fascinating feature that she noted was cells with multiple eggs: these were NOT laying workers, but rather, "backed up queens." The queens were kept caged for a number of days, so were frantic to start laying. Some other cells showed multiple larvae within the same cell: are all going to die, or does one dominate and survive? Tomme also saw zombie fly pupae, amazingly small: they lie on the pollen, not in the cell with larvae, as Varroa mites do.

Tomme was asked what the error rate of the program is: she will ask Dr. Johnson, but noted that the program started kicking her out on certain cells, so it has innate quality control - either that, or there was bias because she was sure the larvae were dead. Norm asked whether the photos are single scored or scored by multiple people: Tomme noted that scores are multiple and totally randomized. Gordon noted that, usually, citizen science projects have a staff person who checks for quality assurance.

(After the meeting, Tomme checked with Dr. Reed Johnson concerning error rate. Here is his response:"Regarding the error rate: The majority of the cells scored (>80%) are scored the

same by every person that has looked at them. There are a number of cells, typically containing larvae or eggs, where there is some disagreement among those scoring, but a clear consensus decision can be discerned. Less than 1% of the cells are truly contentious. The hardest cells are those containing a dry newly hatching 1st instar larva -- they are scored as empty, egg, young larva or dead.")

Norm thanked Tomme for her informative presentation, noting that this meeting overall has given us stimulating ideas that some may choose to follow: an outcome does not always have to be positive to be a learning experience!

OCTOBER BUSINESS MEETING

Announcement: Zombie Fly Sampling by University of Washington

Just in time for Halloween, Renzy Davenport announced that the University of Washington is seeking samples of honey bees that may have been parasitized by zombie flies. UW has stepped up to establish a database that will capture how widespread zombie fly parasitism of honey bees has become in western Washington State and are willing to accept samples from beyond Puget Sound. Right now is the height of parasitic fly infestation, seasonally, but we don't know the time frame on how long it actually lasts. UW will provide data from this study to beekeeping community.

Above, honey bee parasitized by zombie fly ~ see brown rice grain shaped object in foreground. [Image from OregonLive.com]

UW asks us not to send random samples: we should only send samples that we suspect may show zombie fly parasitism. Symptoms exhibited by parasitized bees include: flying at night, disoriented on pavement, near porch lights or other lights, then dropping dead. (So far, no evidence suggests that they rise again in search of brains. . . .)

What to send (post meeting note): Ashley Powell, the UW student coordinating data collection, has sent Susanne a pre-paid mailer with instructions. The instruction letter is attached to this newsletter, and if you'd like a mailer, contact Susanne; if she is out of them, she'll get more.

Gary Stelzner asked if eggs laid in a bee in fall hatch and emerge in spring. Renzy said that, yes, the zombie flies actually lay eggs in bees, but he is not sure of their incubation and hatching process. Jon heard it may be a little too late in season to catch them, but Renzy said that UW is eager to get whatever samples they can ASAP. Norm had read that these zombie flies may be naturally occurring infestations that crop up only occasionally and then are noticed by beekeepers as a problem. Renzy talked with the gentleman in Kent who first found zombie flies in Washington: he said that one theory holds that these flies may have come from California with our package bees. At first, some thought the zombie flies were mainly parasites of bumble bees which crossed over to honey bees, but went unnoticed until recently.

Members present, when polled, expressed interest in hearing a talk on zombie fly parasitism. *Post meeting note: The UW research team will be our March 2014 speakers (see upcoming events, above): they will address not only the zombie fly study, but also their ongoing work on Nosema, and the UW Apiary project.*

Raffle:

President Norm ran the raffle with an able assist from Michaela Phillips. Gordon won first prize and took the swarm trap that looks like a plant pot with a top and bars that can be primed with wax to see if bees will install themselves. Maggie Keeling won next and took home the 25 pound bag of pure cane sugar. Guest Mrs. Prescott won and took home a stack of *Bee Culture* magazines. Gary Stelzner won a ceramic garlic roaster; Kent Yates took home the utensils. Your scribe missed who won the cider. Ed Odell won the first pair of division board feeders, and Steve Howard the 2nd set. Dahlia won the farming magazines published by the Amish, with natural beekeeping information in each issue. Norm thanked donors and raffle tickets, and the raffle netted about $70 for our 2014 youth scholarship program.

Upcoming Events:

Note special start time for our November meeting! At 6:30 p.m., we'll start rolling the 90-minute new film, "More Than Honey" so we can have time for a break, discussion of the film, and our business meeting. For other upcoming events, please see the newsletter section above.

Above, poster for "More Than Honey" ~ LCBA's Nov 13 "movie night" feature

LCBA Elections:

Under the bylaws change adopted last year, LCBA elections now take place at our December monthly meeting; those elected at that meeting take office in January of the new year. In odd-numbered years, the President, Treasurer, and Membership Coordinator are up for election or re-election. President Norm is willing to run for a second two-year term, after which he would be term-limited out and would become Past President. Steve Howard has now served out the second year of Brandy DeMelt's term since Brandy had to step down: he is willing to run for a full term. (Only the President's term is subject to term limits.) Treasurer Jon Wade is willing to run for a second term unless someone else is interested in the job. VP Dave Gaston and Secretary Susanne Weil will serve as nominating committee. If anyone is interested in running for one of the board positions noted above, please contact Dave (fauxelk@hotmail.com) or Susanne (Susanne.beekeeper@gmail.com or call 360 880 8130).

As part of our December election, there will also be a proposal for simplifying our dues structure, noted briefly at this meeting. The wording that members will vote on is as follows:

Proposed Bylaw Change to be voted on at December 2013 business meeting: this proposal would change LCBA's dues structure to one flat fee, regardless of when during the year people join the association. This proposal is intended to end members' often-stated confusion about what dues cost and when they are due.

Proposed New Bylaws Language [changes in ***bold italics***; deletions shown by ~~**strikeouts**~~]:

LCBA BYLAWS, ARTICLE IV- DUES

Section 1. Upon adoption of these bylaws by a regular meeting of the membership of LCBA, dues will consist of a $10 initiation fee and a yearly membership payment of $24. The LCBA fiscal year runs from January 1, through December 31. ***Members may join LCBA at any time during the calendar year for the flat dues rate of $24 plus $10 initiation fee.*** ~~**will have their dues prorated by $2 per month.**~~ Thereafter, yearly membership dues are to be paid to the Treasurer by the January monthly meeting of each year.

Section 2. At such time that the Board of Directors determines that the dues defined in Article IV, Section 1 no longer meet the financial obligations of LCBA, they shall revise the schedule set in Section 1 and put it before the general membership at the next regular meeting thereof. Two-thirds of the members present must approve the revised dues schedule for Article IV, Section 1 to be changed.

Section 3. Annual dues not paid to the Treasurer by January 31 are considered delinquent ~~**and the member responsible will be dropped from the membership register and thereupon shall forfeit all rights and privileges of membership, including receipt of the Association newsletter.**~~ ***Delinquent members will lose all privileges of membership, including voting and participation in activities that carry membership discounts.***

Section 4. Reinstatement of membership terminated for failure to pay dues is automatic upon receipt of dues in full. ***The initiation fee (Section 1) does not apply to those renewing membership.***

Washington State Beekeepers' Association 2013 Conference:

Susanne reported on news affecting beekeepers from the WSBA conference, which was attended by about 65-70 beekeepers, of whom 10 were from LCBA.

Hive Testing in Washington State: Dr. Steve Sheppard (WSU Entomology) and Dr. Tim Lawrence (Island County Extension Agent) are collecting pollen and wax samples from

hives in rural and urban areas: their goal is comparative analysis for neonicotinoids. They plan to get crop overlap data from the Washington Department of Agriculture and provide a neonic map. Over 100 beekeepers in a variety of counties have agreed to participate. WSBA President Mark Emrich noted that this kind of study has not been done elsewhere and will give important information about what we are up against. WSBA and WSU are contributing to study expenses.

Department of Natural Resources asks beekeepers' help to prevent spraying near apiaries: *Background:* two 2013 incidents of spraying on logging roads when blackberries, fireweed, etc. were in bloom resulted in dead hives on adjacent private property, and an affected queen-rearer asked what could be done. The DNR admitted their error and has asked WSBA to review when, where, and how they apply chemicals. In several other states, hive registrations are used as spray points.

DNR Proposal: A recommended amendment would require that two weeks prior to spraying, DNR would contact beekeepers directly, not simply send a postcard. After that direct contact, the clock would start. If beekeepers cannot move their bees, DNR would work around them, using mechanical removal, not spraying. DNR also would ask commercial beekeepers when they are out of state and try to treat when their bees are out of state. As this is all in the talking stage, the details will be worked out in the next few mounts.

The DNR has taken this very seriously, and will be working with WSBA on new spraying guidelines that will help prevent future bee kills. However, if this program is to work, beekeepers must support it by registering hives. As of October 2013, only 135 Washington beekeepers have registered colonies.

Norm asked for a show of hands of LCBA members who have registered their hives - very few do. He noted that the fees contribute to WSU bee research. Norm noted his bee losses after spraying between Tenino and Bucoda: he stopped in and was aghast to find a two quart bin's worth of dead bees and larvae. If any bees from those colonies survive, they won't go back to the contaminated forage. They were dragging out pollen – yellow, so probably Scotch Broom - and sure enough, broom had been sprayed a couple days before Norm found his bees dead.

A member asked what it costs to register hives: $5 per hive for small scale beekeepers (see the Resources and Links page on our website for the apiary registration form, which contains rates). Renz missed the April deadline, but when he contacted them, they had no problem with late registration and said nothing about fining him. Renz emphasized the value of our supporting WSU's research lab with our fees.

WSBA Secretary: Finally, the office of WSBA Secretary was left vacant by the untimely death of former state apiarist Jim Bach. Jim Bach was brought to Chehalis in August 2008 by LCBA Past President Bob Harris and Extension Agent Sheila Gray: the large turnout for his workshop was the starting point for LCBA. LCBA Secretary Susanne Weil accepted nomination and was elected secretary of WSBA for 2013-14; she will continue as LCBA Secretary.

Beekeeping Q&A:

Questions centered on bee predators. Are bald-faced hornets on the rise? Herb Keeling noted that in East County, they are seeing fewer of them this year. At Gary's September 7 fall management issues workshop, we spotted black jackets, a color variant of yellow jackets. Mel Grigorich noted that he had yellow jackets in his grapes and noted these so-and-so's are tough:

they will walk off sticky fly traps and fly away. Herb noted that his bees have been tough on yellow jackets. Susanne observed that when her colonies have suffered from Varroa infestation, they seem more vulnerable to yellow jacket predation: perhaps strong colonies can fend them off with normal defensive behavior.

Above, Asian Hornet devours honey bee (Science Photo Library)

Asian hornets: these large predators came to Europe through Chinese pottery imports two years ago. Since then, they have decimated bee colonies in southern France and have even killed people with stings, most recently a beekeeper in southern France. They destroy whole colonies and eat all the food supplies. Norm noted that they are using blowtorches to wipe them out kill them before they multiply. Susanne booted up the website and showed photos of these giant hornets on the "Bees in the News" page. It is to be hoped that we do not see Asian hornets here in the U.S., but given how much we import from Asia, this may be a vain hope.

"MORE THAN HONEY": NEW FILM BY MARK IMHOOF

Review by Dr. Dewey M. Caron, Emeritus Prof. of Entomology, University of Delaware, and affiliate faculty at Oregon State University

To view the film's trailer, visit: http://vimeo.com/45684169

"More than Honey" is not perfect, but it should touch your activism gene. For example, it attributes Albert Einstein as having said "If bees were to disappear from the globe, mankind would have four years left to live." [*see note below] He was a wise man, but that statement is so patently incorrect it is a shame that it was included. What the film does have is some amazing footage of bees, both inside their hive and of the honey bee mating process and foraging outside their hive. Unfortunately it is also a rambling documentary about the decimation of the world's bee population, labeled (again incorrectly) as CCD, Colony Collapse Disorder.

Directed and written by Markus Imhoof, a Swiss filmmaker, the movie best covers the biology and social behavior of bees. Mr. Imhoof is descended from a long line of Alpine beekeepers.

The film seeks, imperfectly, to contrast "Industrial Apiculture" of John Miller, a U.S. beekeeper, with Imhoof's family beekeeping in the Swiss Alps, whose beekeeping, including keeping pure German "black" bees, is still done in traditional ways.

The film includes appropriate scenes from a surprisingly human John Miller trying to make 10,000+ colonies pay the bills by trucking bees from almonds to honey locations in the midwest. Although it is not exactly a tear in his eye when he discovers a dead colony, it is evident he cares. The film has a couple of interesting contrasts on both Miller's beekeeping practices and the Swiss traditional way of keeping bees in a bee house – look for the treatment of the interloper Carnica queen and AFB as plot twists.

The cinematography, by Jörg Jeshel, is spectacularly outstanding, whether the camera is focused on the Swiss Alps, the California almond bloom or the interior of a hive, where bees are observed in enlarged close-up. I thought the film went overboard with cartoonish slow-motion footage of bees in flight and really "lost" itself with too long and too convoluted coverage of human pollination in China and Africanized bee beekeeping in the Americas.

Although not a scientific film, More Than Honey does have some science, including observations of Professor Menzel, a German neurobiologist who discusses the concept of the colony as a superorganism. There is historic footage of Professor von Frisch.

The film is not particularly objective in its coverage of pesticides and seeks to lay a lot of the current problems on pesticides. The dead bee falling from a blossom after being sprayed is sure to remain as a lasting impression. At the end, the central message that bees are in trouble and there is no simple solution is rescued by closing language indicating the bee loss epidemic is not single-factorial. Beekeepers should see the film for the bee biology and beautiful photography.

**A note from your scribe: Einstein almost certainly never made that statement. The Snopes.com mythbusting website tags it as urban legend (http://www.snopes.com/quotes/einstein/bees.asp). No Einstein biography notes his having said it; the New Quotable Einstein says the quote was probably not his, though frequently attributed to him (ed. Alice Calaprice, Princeton U Press, 2005, p. 295). The "quote" sensationalizes a real problem, and unfortunately, may make some skeptics think the problems bees face may just be hype, too.*

BEES IN THE NEWS

Thanks to Steve Norton, Norm Switzler, Tomme Trikosko, & Jon Wade for sending stories.

"Diesel Exhaust Stops Honeybees from Finding the Flowers They Want to Forage," 3 Oct. 2013, ScienceDaily.com; "Bees' Foraging for Flowers 'Hampered by Diesel Exhaust,'" 3 Oct, BBC News:

We're used to hearing about the negative effects of pesticides on honey bees, but we don't often consider how common pollutants like car exhaust may affect them. A new study by the University of Southhampton has found that when exposed to chemicals in diesel exhaust, bees' capacity to identify floral odors diminishes significantly. When pollution stops bees from recognizing floral odors, their ability to forage efficiently may be affected and, by extension, pollination and "global food security."

The researchers mixed 8 chemicals from rapeseed flowers with – in one condition – clean air, and - in the other condition - with air mixed with diesel exhaust, including NOX gases (nitrogen dioxide). 2 of those floral chemicals disappeared within 60 seconds of exposure to diesel exhaust; the other 6 dropped

substantially in volume. Honey bees could not recognize the floral odor in this mixture; in contrast, clean air did not affect the floral odor or change normal bee behavior.

The study taught bees to link individual chemical smells with a food reward of sugar syrup. Bees stick out their tongues in response to tasting the sugar – what they do when they find nectar on a flower. Once bees are trained to respond to a particular scent, scientists can use this "proboscis extension reflex (PER) test" to determine how they respond to that scent when "depleted by exposure to NOx [the reactive chemical in diesel exhaust]." Bees exposed to the air mixed with diesel exhaust did not stick out their tongues, thus showing no recognition of the floral odor.

According to Dr. Tracey Newman, lead neuroscientist on the project, "Honeybees have a sensitive sense of smell and an exceptional ability to learn and memorize new odours. NOx gases represent some of the most reactive gases produced from diesel combustion and other fossil fuels, but the emissions limits for nitrogen dioxide are regularly exceeded, especially in urban areas. Our results suggest that that diesel exhaust pollution alters the components of a synthetic floral odour blend, which affects the honeybee's recognition of the odour. This could have serious detrimental effects on the number of honeybee colonies and pollination activity."

To read more, visit:
http://www.sciencedaily.com/releases/2013/10/131003093035.htm?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+sciencedaily+%28ScienceDaily%3A+Latest+Science+News%29

and: http://www.bbc.co.uk/news/24364637

"Swedish researchers develop medicine to protect bees from deadly diseases," 29 Sept 2013, AFP / Fox News:

In Sweden, Lund University microbiologists have patented a new medicine called "SymBeeotic," which they say "boost[s]" bees' immune responses and may save beekeepers from suffering colony losses at the rates seen in recent years. SymBeeotic is synthesized from lactic acid bacteria, taken from "stomachs of healthy bees." Dr. Alejandra Vasquez, co-creator of the drug, notes that "[t]he bacteria in this product is active against both American and European foulbrood disease." Using SymBeeotic as a preventative may relieve beekeepers of any need to treat with antibiotics and risk increasing antibiotic resistance.

To read more, visit: http://www.foxnews.com/science/2013/09/29/swedish-researchers-develop-medicine-to-protect-bees-from-deadly-diseases/?intcmp=latestnews

"Sneaky breeders make sons," 15 Aug 2013, Nature:

Australian entomologists have observed an exception to the rule that worker bees don't reproduce. We're familiar with the phenomenon of the "laying worker," a problem that signals a queenless hive, but the researchers found that workers actually lay 4.2% of drones – 40 times more than had been thought up till now – and that workers increase this production to 6% when queen cells are present in the hive, either prior to supersedure or swarming. The researchers hypothesize that workers may increase their rate of laying to improve the odds that there will be sufficient drones to mate new queens.

To read more, visit: http://www.nature.com/nature/journal/v500/n7462/full/500257e.html . Original study published in Molecular Ecology, Vol. 22, pp 4298-4306. Nature reference: Nature 500, 257 (15 August 2013) doi:10.1038/500257e. Published online 14 August 2013.

Above, the hardy black bee: photo by BBC News

"Honeybee sanctuary status for Colonsay and Oransay Honeybees," 7 Oct 2013, BBC News:

Two islands in the British Hebrides, Colonsay and Oronsay, will become a native honeybee sanctuary on New Year's Day, January 1, 2014. No bees other than the Black Bee, Apis mellifera mellifera, will be legal to import. So far, the 50 black bee colonies on these islands have not been infested by Varroa destructor mites, and the new sanctuary status is aimed at maintaining their mite-free status.

The United Kingdom is home to 250 bee species: "24 species of bumblebees, 225 species of solitary bees, but just one honeybee species, the native Black Bee." These black bees are known as hardy survivors, better adapted to the cold, wet Hebridean climate than Italian bees. The new sanctuary was green-lighted by the Scottish government after "overwhelming support" from the public.

To read more, visit: http://www.bbc.co.uk/news/uk-scotland-glasgow-west-24428707 .

"2000 bees travelling 2000 miles in a flying beehive," 15 Oct 2013, VITA Europe News:

Dr. Alexandros Papachristoforou, world-renowned Greek entomologist whose most recent work has focused on the Asian hornet's threat to honey bees, has set out to teach Greek students why they should care about pollinators. He's flying to schools all over Greece with an observation hive of 2000 bees. Supported by crowd-funding, he hopes to expand the venture to visit other countries in the EU.

Papachristoforou explained: "Honeybee populations are in decline and every young person needs to understand the implications of that in terms of pollination and diet. . . So we are embarking on our FlyBee venture to publicise the plight of honeybees and to educate the next generation. We are appealing to anyone to make a contribution, however small, to help us fly the word. We've had a test flight to a school — and the schoolchildren talked about nothing else but honeybees for weeks! It was a great success!"

To support the "FlyBee" venture, visit the crowd-funding website: http://tinyurl.com/2000beemiles. The online campaign ends on November 23. Vita Europe reports that "[e] very donation will receive special acknowledgement depending on value — from 5€ for your name to appear on a picture of a bee on the aircraft wings to 1000€ for a day's flight on the aircraft and 3000€ for a two-day flight with accommodation . . . funds raised will go towards teaching materials, fuel, accommodation, aircraft maintenance and a new aircraft parachute."

To read more, visit: http://www.vita-europe.com/news/2000-bees-flying-2000-miles-in-a-flying-beehive/
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COOKING WITH HONEY

If you're relatively new to LCBA, you may not know that we have an archive of recipes using honey on our website, www.lewiscountybeekeepers.org – click on the "Honey" link, then "cooking with honey." The page also has conversion charts for substituting honey for sugar. Everyone's favorite food holiday is on the horizon, so visit our site if you'd like to grace your Thanksgiving table with some honey-infused dishes. This month, we have some new recipes from PCC Sound Consumer: thanks to Tim Weible for passing these along!

Pecan Honey Cake

(Makes 1 loaf, 12 servings)

Ingredients: Butter & flour for pan; 1 cup honey; 1 cup unsweetened applesauce; 3 eggs; 1 tsp vanilla; 1 cup all purpose flour; ½ cup whole wheat flour; ¾ tsp baking soda; ¼ tsp salt; ¼ tsp ground ginger; ¼ tsp cinnamon OR clove; ½ cup pecan halves, divided

Process: Preheat oven to 350 degrees F. Butter & flour a 9x5 inch loaf pan. Combine honey & applesauce in large bowl. Add eggs & vanilla; whisk till well combined.

In separate bowl, sift together flours, baking soda, salt, ginger, cinnamon OR clove, & nutmeg. Stir into honey mixture. Chop half of pecans & fold into batter. Pour batter into prepared pan & top with remaining pecan halves.

Bake till toothpick inserted into center of loaf comes out clean – 50 to 60 minutes. Cool in pan 15 minutes; transfer to wire rack; enjoy!

All-Purpose Balsamic Honey Glaze

Try this on poultry, seafood, pork, vegetables, or fruit . . . makes approx. 1 cup / 8 servings

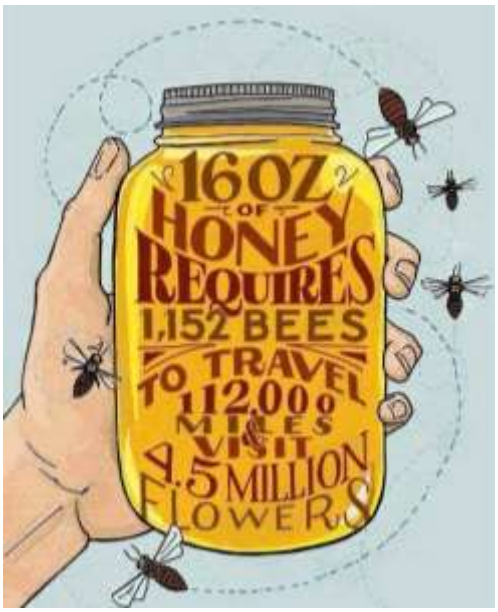
Ingredients: ½ cup balsamic vinegar; ¼ cup honey; 2 Tbs Dijon mustard; 2 cloves garlic, minced; 1 tsp chopped fresh herbs (rosemary, thyme, oregano, etc.); salt & pepper to taste

Process: Combine ingredients in small sauce pan & bring to boil; reduce heat to simmer & cook, stirring occasionally, till slightly thickened, 3 to 5 minutes; cool & store in refrigerator up to 10 days.

To use on pork chops, poultry, salmon fillets: can be used as a marinade. Alternative: preheat oven to 350 degrees F.; sear protein on both sides in skillet over medium-high heat with a little oil, till golden brown; transfer to baking dish and pour glaze over protein to coat; roast till desired doneness reached.

On winter squash: add 2 Tbs melted butter to glaze mixture; preheat oven to 425 degrees F.; halve squash & remove seeds; arrange in shallow baking dish; coat squash with glaze & roast till golden & tender, 30 to 45 minutes, depending on size of squash.

On fruit (pears, figs, peaches, etc.): leave out the mustard & garlic; add a pinch of spice (cinnamon, cardamom, or clove); preheat oven to 400 degrees F.; wash, halve, & core fruit (if necessary) & place in baking dish; coat with glaze; bake till fork-tender.



Thanks to Connie Robertson for this graphic showing what bees do to make a pound of honey!

Spiced Honey Almonds

Fun finger food while your guests are waiting for the main event!

Ingredients *(makes 2 cups):* Spray oil; ¼ cup honey; 1 Tb unsalted butter; 1 ½ tsp garam masala; 1 tsp sesame seeds; 1 tsp kosher salt; 2 cups whole raw almonds

Process: Preheat oven to 325 degrees F.; line baking sheet with parchment paper; lightly coat with spray oil; melt honey, butter, garam masala, sesame seeds, & salt in saucepan over medium-low heat; add almonds & stir to coat; spread almond mix on baking sheet in single layer; bake 10 minutes; cool completely before serving; store in airtight container up to 4 days.

ANNOUNCEMENTS & HELP WANTED

Zombie Fly Testing: UW is collecting data on zombie fly infestation in western Washington. UW is asking only for samples of bees that show symptoms: flying at night, disoriented on pavement, near porch lights or other lights, then dropping dead [thankfully, they do not rise in search of brains]. The form you'd fill out to send samples is attached to this newsletter: to get their prepaid mailer and mailing address, contact Susanne. To learn more about zombie fly parasitism, visit http://www.zombeewatch.org.

Complete bee colonies for sale: Renzy Davenport reports that a Lithuanian beekeeper in Kent, WA has about 200 hives – woodenware + bees on frames with drawn comb & food stores– that he is willing to sell up through Jan 1, after which he'll be taking the bees to California (he'll be selling again when he returns in April). He builds his own bottoms, boxes, and lids to Langstroth specs; frames were purchased. The bees originally came from Carniolan and Italian stocks, but now are essentially "mutts." 1 deep + bees is $150.00; a 2 deep box + bees is $250.00. This

gentleman does not speak English: if you call, his daughter, Luba, will answer the phone: 253 232 8014. Renzy's brother in law bought a deep from this source several weeks ago and reports he's happy with it.

Looking for honey bee photos for presentations? Vita Europe's photo gallery has free photos that subscribers can download, and subscribing is free. Visit: ***http://www.vita-europe.com/gallery/.*** Thanks to Jon Wade for passing this along!

Available in LCBA's Library (ask Dave Gaston at a monthly meeting): Dewey Caron's Honey Bee Biology and Beekeeping ~ Expanded & Updated 2013 Edition: Dr. Dewey Caron, who's spoken on bee losses at LCBA meetings for the past several years, has donated a copy of his updated book to our library. It's been reviewed very positively in the October edition of *American Bee Journal* and the September issue of *Bee Culture*. LCBA member Peter Glover notes that this book is useful at all levels of beekeeping – he's used it in home beekeeping, to prepare for teaching in the Apprentice course, and as a student in our ongoing Journeyman class. Peter reports that the advantage of this new edition rests in its color photographs, which make it much easier to visualize what you're looking for as you inspect your bees – after all, it's not a black & white world. . . .

Want to put some bees on other folks' property in 2014? At the Fair, several people asked if they could host bees – they'd like the pollination for their gardens, but don't feel ready to do beekeeping themselves. If you have more hives than you know what to do with, please contact Susanne about these potential foster homes.

Walter T. Kelley Co. Sale on 72 frame extractor and Ladies' Blue Coveralls: for details, see www.kelleybees.com or call 800 233 2399. The extractor is described as "gently used."

Discovery Children's Museum would like an observation hive: can you help? If you have an observation hive to loan or donate to the Discovery Children's Museum in Chehalis, please contact Susanne. The Museum seeks help to attract children's interest to bees.

Kids' Page for LCBA Website – coming soon, we hope: Susanne is searching for age-appropriate videos, websites, texts, and of course illustrations to help children learn more about honey bees. If you know any great resources for children interested in bees, please let her know! Thanks to Terrie & Michaela Phillips for their contributions so far.

November Western Apicultural Society Newsletter: Visit http://groups.ucanr.org/WAS/WAS_Journal and click on the line in the paragraph on the right as directed. If you're still getting the old issue, click on "empty cache" in your browser or "refresh" or "reload" under VIEW in your menu bar.

November WSBA Newsletter: Pick up your copy from www.wasba.org: click on "Newsletters" under OUR SPONSORS on the lower right of the page. Then click "Current issue.

That's all for this month - take care, & bee happy!

~~ Susanne Weil, LCBA Secretary (Susanne.beekeeper@gmail.com; 360 880 8130)