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August 2014 LCBA Newsletter

In This Edition:

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 EVENTS:

Above, top bar hive made by VP Dave Gaston for August 13 drawing to benefit KiReeCo, our "sister association" of Kenyan beekeepers.

August 9, Workshop: Removing Honey Supers ~ Learn Techniques to Get the Frames Without Harming Your Bees.

When: 1 to 3 p.m.

Where: Winlock (for address & directions, please RSVP to susanne.beekeeper@gmail.com or call 360 880 8130).

What: We'll cover fume boards, bee escapes, & the blower & the brush-off methods. When should you pull your supers? Discussion to follow / beekeeping Q&A. Please bring protective gear.

August 12-17: LCBA at the Southwest Washington Fair

We'll have an exhibit in the Floral Building again, with our Observation Hive, People's Choice Honey Judging, & plenty of materials to help our Lewis County neighbors get to know bees better. LCBA's official Fair honey judging will be August 11: for details re: entry & criteria, see subsequent section of this newsletter. Want to volunteer to staff our exhibit, or have show & tell items to loan? Please contact Susanne (see above).

Above left, kids of all ages were fascinated by last year's observation hive; right, the wild honey bee hive display loaned by Kevin & Jeanne Reichert & Grant Inmon drew people in from the Fairway.

August 13: LCBA Monthly Meeting

When: 6:30 – 8:45 p.m. Social Time 6 to 6:30 p.m.; Speaker, 6:30; Business Meeting 7:45 – 8:45.

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

Topic: Why Honey Bees Need Weeds: They're Medicinal!

Speaker: Franclyn Heinecke, WSBA Area 2 Representative: With relatively few immune genes, bees use forage - resins, nectar and pollen - to strengthen individual & colony immune responses. Blackberry pollen & honey, specifically, are especially nutritious for honeybees. Franclyn will also review some plants listed as noxious weeds, how they are controlled, & costs to state agencies of that control, as well as native plants beneficial to bees that can be used in gardens. Franclyn was at our May meeting & will offer an interesting counterpoint to Bill Wamsley's noxious weed presentation.

Business Meeting: Monthly Drawing – this month's benefits KiReeCo, our "sister beekeepers" in Kenya. Dave Gaston's hand-tooled top bar hive (with bees from Norm next spring) will be up for drawing tonight. Also: LCBA logo hats for sale (see item below); vote on KiReeco memorandum of understanding [attached to the newsletter email]; updates on youth scholarship program, upcoming classes & workshops, 501(c)4 application; & Beekeeping Q&A: honey supers, anticipating fall management, & whatever's on your mind….

Above, honey bee foraging on dandelion (photo, FreeBigPictures.com)

August 23: "Getting Started in Beekeeping" ~ Free Overview ~ Open to the Public

When: 10 a.m. to 12:30 p.m.

Where: Centralia Timberland Library, 110 S. Silver St, Centralia, WA 98531 – Meeting Room

What: ***Are you, family members, or friends interested in taking a beginning beekeeping class?*** LCBA Membership Coordinator Tomme Trikosko & Secretary Susanne Weil will lead this free overview of what's involved in beekeeping – time, equipment, costs, rewards, "bee bio 101," hive inspections, bee management, & more, plus a preview of our fall LCBA/WSBA Apprentice class (see October 4, below). PowerPoint slideshow plus "show & tell" demonstration equipment. Children welcome! Questions? Call 360 880 8130, or email susanne.beekeeper@gmail.com.

September 6: Fall Management Issues Workshop

When: 1 p.m. to 3 p.m.

Where: Winlock (for directions, please RSVP to Susanne (see page 1 for contact)

What: What to look for when doing fall inspections? Testing for mites, treatment pros & cons, treatment methods, questions of reversing hive bodies, fall feeding, & more. Beekeeping Q&A to follow.

September 10: LCBA Monthly Meeting

When: 6 – 8:45 p.m.: Social Time 6 to 6:30 p.m.

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

Topic: Improving Fall/Winter Survivorship

Speaker: Dr. Dewey Caron: Bee losses in the Pacific Northwest were fearsome this past winter: Dr. Dewey Caron, affiliate faculty in Entomology at Oregon State University and one of the driving forces behind BeeInformed's bee loss survey, will update us on losses, broken out by Langstroth v.s. Top Bar v.s. Warre hives, but his main focus will be take-home messages from BeeInformed's research on "what we as beekeepers can do – before fall weather closes us down – to raise the bees that are going to raise the bees to pass the winter: fall management with emphasis on helping improve survivorship." Q&A from LCBA members to follow.

September 13: Honey Spinning Workshop

When: 10 a.m. to 4 p.m.

Where: Winlock (for address & directions, please RSVP to Susanne – see page 1 for contact)

What: LCBA members – bring your honey frames to spin! Limit, 2 supers, so wait times won't be extreme – if you need to spin more honey, contact Susanne & we'll set it up. Our new club extractors will be on hand, plus gear loaned by board members – uncapping tanks, hot knives, etc. Please bring buckets for your honey – food grade! Ed Carter & Sue Allen report that Spiffey's Bakery in Napavine, 115 2nd Ave. N.E., is selling food grade buckets for $3. Used buckets are also sometimes available for sale by WalMart and Safeway. If you don't have honey to spin but want to see how it works, please come! Refreshments provided & members are welcome to bring some too and make it a party ☺

Above left, Dahlia displays her honey; right, Greg & Sally Weber, Gordon Bellevue, & Ted Saari in various stages of honey extraction at our 2013 workshop.

September 17-20: Western Apicultural Society Annual Conference & 2nd International Workshop on Hive & Bee Monitoring

Where: University of Montana, Missoula [road trip!]

For Details & Registration Information, Visit: http://ucanr.edu/sites/was2

What: Hands-on workshops, talks, & displays, plus 2 keynotes:

(1) Thurs, Sept 18: Keynote Speaker: Dr. Eric Mussen, UC Davis: "Eric will be talking about what has changed in beekeeping during his professional lifetime. You know him - entertaining, informative, plain spoken and easy for anyone to understand, be they beginner beekeepers or ones with decades of experience."

(2) Fri, Sept 19: "G. Philip Hughes, Senior Director of the White House Writers Group of Washington, D.C.; Former Ambassador and White House National Security Aide for Presidents Robert Reagan and George H.W. Bush, will address the neonicotinoid pesticides and bees debate, giving a play-by-play of how this issue has been played out, highlighting issues ignored, misstated or oversimplified by media & politicians."

(3) Sat, Sept 20: Workshops "covering a variety of practical topics of interest to beekeepers and geared especially for those folks who cannot get away to attend the earlier events."

(4) Missoula's Honey Harvest Festival will be in full swing, too.

September 27: "Getting Started in Beekeeping" ~ Free Overview ~ Open to the Public

When: 2:15 – 3:30 p.m.

Where: Centralia College, Washington Hall 103, following Gardening for Everyone

What: Are you, family members, or friends interested in taking a beginning beekeeping class? LCBA board members will lead this free overview of what's involved in beekeeping – time, equipment, costs, rewards, "bee bio 101," hive inspections, bee management, & more, plus a preview of our fall LCBA/WSBA Apprentice class (see October 4, below). PowerPoint slideshow plus "show & tell" demonstration equipment. Children welcome! Questions? Call 360 880 8130, or email susanne.beekeeper@gmail.com.

WASHINGTON STATE BEEKEEPERS ASSOCIATION

KEEP the BEE in BUSINESS

Above, LCBA Membership Coordinator Tomme Trikosko at 6-21 workshop; Tomme, who's been keeping bees for several decades, joins our cadre of beekeeping instructors for this fall's class after embedding the WSBA curriculum in her spring 2014 animal husbandry class at Toledo High School.

Coming Saturdays this October/November: LCBA's BEGINNING BEEKEEPING CLASS

When: October 4, 11, 25, November 1, 8, from 9 a.m. to noon

Where: Centralia College Student Center, 212 S. Rock, Centralia WA 98531

Registration Brochure: available under "Upcoming Events" on LCBA's website (or ask Susanne for a copy). LCBA offers the Washington State Beekeepers' Association's apprentice beekeeping curriculum. The class builds core beekeeping skills and covers basic bee biology/behavior, equipment & apiary set-up, seasonal management, identifying & managing pests, honey harvesting, and over-wintering. Students completing the course earn WSBA's Apprentice certificate & can advance to Journeyman & Master Beekeeper courses. Washington State Beekeepers' Association manual lays out basics for beginning beekeepers; LCBA's PowerPoints & demonstration materials supplement manual with visuals. Questions encouraged; children welcome. Post-Course Support: LCBA's free Mentor Workshops give hands-on guidance in working bees. Students who join LCBA are eligible for discounts on spring package / nuc bee orders & free consultations with an individual "bee mentor." Course cost: $35 individual, $50 couple/family. Fall 2014 instructors: Tomme Trikosko, Norm Switzler, Bob Harris, & Jon Wade.

Left, Island Cty Extension Director Tim Lawrence, our Oct 8 speaker; right, Dr. Dewey Caron, Sept 10

October 8: LCBA Monthly Meeting

When: 6 – 8:45 p.m.: Social Time 6 to 6:30; Speaker, 6:30 to 7:30; Business Meeting & Beekeeping Q&A, 7:45 to 8:45

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

Topic: Neonicotinoids & Bees; Bee Biodiversity

Speaker: Dr. Tim Lawrence: Tim is the Extension Director of Island County. Based on Whidbey Island, Tim works with WSU's Entomology department researching a wide range of honey bee health issues, including their most recent project sampling Washington colonies for traces of neonicotinoids. His talk on "Human Dimensions of CCD" was one of the highlights of last October's WSBA Conference.

LCBA MONTHLY MEETING NOTES: JULY 13TH

Above, Norm & Michaela ran the drawing, & Dahlia wins a prize; right, one of Michaela's cupcakes.

Summer Potluck: About 60 beekeepers attended our 6th annual summer potluck. This was our first time at Lintott Alexander Park by the Chehalis River: it was mighty hot, but Shelter #2's roof gave welcome shade as we consumed a wide array of dishes, including two by our youngest members. Below, bee-themed cupcakes baked by Michaela Phillips were a big hit – so was the rum cake baked by Dahlia Mechell, but alas, by the time your scribe got back to it with a camera, there was nothing left to photograph!

We also awarded LCBA's first ever honorary lifetime membership to our founding president, Bob Harris of Rose of Sharon Farm. Together with Extension director Sheila Gray, Bob wrote the grant that funded our original 2008 workshop led by the late, former state apiarist, Jim Bach. Bob's generous gifts of his time & expertise helped launch many of LCBA's iniatives, among them offering a regular apprentice beekeeping course. Bob & his wife Sharon host our annual hive assembly workshops and have often hosted other events, like our summer potlucks. Our current Youth Scholarship Program has its roots in Bob's concern about bringing young people into beekeeping. His sense of humor and joie de vivre set a tone of informality and fun that we hope never leaves this group!

Above, left, LCBA's founding president, Bob Harris, hiving bees at LCBA's 1st hiving workshop in 2009; right, Bob wearing the "Bee Hat of Authority."

Drawing: Ably assisted by Michaela, Norm led the drawing. Among other things, we learned that no receptacle prevents winning tickets from clinging together ;) Many fun items were donated, including

some beautiful nesting bowls & puckish beekeeping-themed "no parking" signs. We raised over $70 for next year's Youth Scholarship program. Thanks to all who donated items and bought tickets!

Above, LCBA members watching the drawing to benefit our 2015 Youth Scholarship Program.

Southwest Washington Fair, August 12-17: Susanne updated on the Fair & signed up 32 ~~victims~~ volunteers. Thanks to all of you who are stepping up to help us share understanding of honey bees with our Lewis County neighbors, as well as to others who are donating show & tell items!

Honey Contests at the Fair: If you're interested in submitting your honey, please see the handouts attached to this newsletter or refer to the July newsletter. In brief, though, official Fair contest honey must be submitted at the Floral Building on Monday, Aug 11, between noon & 7 p.m. – it can be light, amber, or dark, must have moisture content 18.6% or under & must not be excessively filtered, multiple submissions are fine, & honey must be submitted in one pint Queenline jars – free to LCBA members (check with Susanne if you still need one). Official judging is Tuesday, Aug 12; pickup is on Sunday, Aug 17, or arrange it with Susanne.

For the People's Choice honey contest, please drop off submissions at the Floral Building before Saturday, Aug 16 – a half pint jar is fine, and shape & make don't matter – just flavor! The People's Choice vote tally will happen on Saturday afternoon and honey will be available for tasting both on Saturday and Sunday at the Fair. People's Choice submissions don't get returned – what remains is used for tasting displays at LCBA classes & workshops.

Above left, discerning young palates sampling honey in our 2013 People's Choice tasting contest; right, winners in the official Fair contest.

New LCBA Treasurer

Jon Wade has stepped down as LCBA Treasurer. The board has appointed Rick Battin to serve out Jon's term, which expires in December 2015. Welcome to Rick, and many thanks to Jon for his hard work and thoughtful insights since joining the board in 2011. Jon , who completed his WSBA Journeyman certification last year, also facilitated our first Journeyman course here in Lewis County, computerized our books, organized our package bee and nuc sales, and brought his long experience as a shop steward to bear in helping the board sort through many complex decisions over the past two and a half years. Rick has been keeping bees for quite a few years on his family tree farm in Winlock: he's just taken the WSU beekeeping courses in Pullman, so ask him how they were! Rick took our LCBA/WSBA apprentice course in Morton in March 2013. (FYI: The treasurer's mailing address has been updated on our membership and other website materials.)

Above left, outgoing LCBA Treasurer Jon Wade looking dapper uncapping honey at our 2012 workshop; right, new treasurer Rick Battin (we're pretty sure he's the one on the left in this picture….).

LCBA Logo Hats

VP Dave Gaston went to the Treatment Free Beekeeping conference last year & noticed that he was about the only person there not wearing a hat or t-shirt with his bee association's logo. Now Dave has organized baseball caps with LCBA's logo stitched on from Alderson's Awards West. We'll have 12 adult & 6 child hats available at our August 13 meeting at cost, for $12 apiece, first come, first served. If there's a demand, we can order more: who knows, maybe we'll even venture into the land of t-shirts! Please let the board know your wishes about further LCBA – themed garb and consumables, and we'll try to make them happen ☺

Bees in the News

Thanks to Franclyn Heinecke, Steve Norton, Kevin & Jeanne Reichert, Norm Switzler, Tomme Trikosko, and the good folks at Bee Culture & American Bee Journal for sending news this month.

"Scientists may have finally solved mystery behind honey bee decline": 21 July 2014, *St. George News:* A four year international study by the Task Force on Systemic Pesticides has found "clear evidence of harm sufficient to trigger regulatory action" of neonicotinoid pesticides as the driving force behind honey bee decline. Among the chronic damage that the task force found even sublethal doses of neonics to cause bees are: "impaired sense of smell or memory; reduced fecundity; altered feeding behavior and reduced food intake including reduced foraging in bees; altered tunneling behavior in earthworms; difficulty in flight and increased susceptibility to disease." Farmers spend $2.6 billion per year on neonics, which are injected into seeds and infuse all tissues as the plants grow, to eliminate pests and maximize crop yields, often using them as a preventative measure rather than in response to pest infestation.The task force urges legislators to take immediate steps to phase neonics out of agricultural use. To read more, visit: http://www.stgeorgeutah.com/news/archive/2014/07/21/kss-scientists-may-have-finally-solved-mystery-behind-honey-bee-decline/#.U9KGKP10zIV.

A bumblebee wears an RFID tag glued to its back. The tag was scanned as the bee entered and left the hive, so the researchers could keep track of individual bees. (Photo by Oscar Ramos-Rodriguez)

"Bee Foraging Chronically Impaired by Pesticide Exposure: Study": 10 July 2014, *American Bee Journal*

A joint Canadian / British study has found that "long-term exposure to a neonicotinoid pesticide hampers bees' ability to forage for pollen." Scientists attached "tiny radio frequency tags," like those used to track packages in the mail, to bumbles to track their daily behavior, "including pollen collection and which flowers worker bees chose to visit." Imidacloprid and pyrethoid seem to stop bees from learning foraging skills. Tracking "when individual bees left and returned to the colony, how much pollen they collected and from which flowers," they discovered that "bees from untreated colonies got better at collecting

pollen as they learned to forage. But bees exposed to neonicotinoid insecticides became less successful over time at collecting pollen." Even though the colonies increased forager numbers to compensate, colony pollen collection dropped. The neonic-exposed bumbles chose different flowers than untreated bees did. To read more, visit: http://us1.campaign-archive2.com/?u=5fd2b1aa990e63193af2a573d&id=a76fdfe404&e=e9ff21e0bb.

Further details published by CBC include how the study strove to replicate field conditions: scientists turned loose "40 new, young colonies of bees to forage in the wild for four weeks at a time, but later in the growing season when their exposure to pesticides from farm fields should normally be very low. The pesticide levels were designed to be similar to what bees would be exposed to from pesticide-treated crops. A control group of 10 colonies were offered plain sugar water. The researchers found that the bees chose to drink all the sugar water, regardless of whether it contained pesticides or not." In an earlier analysis of how neonics affected colonies, the researchers discovered "that colonies exposed to neonicotinoids had 25 per cent fewer workers and were significantly smaller at the end of the study period." The researchers urge that long term, sublethal effects of neonics be considered in protocols for approving or renewing approval of these pesticides. For details, see http://www.cbc.ca/news/technology/bee-foraging-skills-impaired-by-neonicotinoid-pesticides-1.2700266

"Decline in birds, not just bees, linked to neonicotinoid pesticides: pesticides likely affect birds by causing a decline in insects they use to feed their young": 14 July 2014, *CBC News*

Silent Spring de ja vu: A Netherlands study has shown that bird populations decline when imidacloprid is present in "high concentrations" in lakes, streams, and other "surface waters." Only 5% of imidacloprid applied to plants actually enters the plant's vascular system: the rest is taken up by wind and run-off. 15 bird species were found to have declined between 2003 and 2010. The study, published in Nature, showed that "where concentrations of the pesticide were more than 20 nanograms per litre, populations of birds such as barn swallows, tree sparrow and common starlings fell 3.5 per cent a year, compared to the average population trend for their species." Since neonics have not previously proven toxic to birds, the scientists believe that neonics kill insects that these birds need to feed their young, but they have not ruled out direct poisoning. A 2013 Canadian study showed that "a single kernel of imidacloprid-treated corn can kill small and 'blue jay-sized birds,' and sicken larger ones." To read more, visit: http://www.cbc.ca/news/technology/decline-in-birds-not-just-bees-linked-to-neonicotinoid-pesticides-1.2706542.

An adult common starling (Sturnus vulgaris) with gathered insect prey - one of the 15 species shown to be affected by elevated imidacloprid concentrations in surface water in the Netherlands. (photo by Jouke Altenburg/Radboud University)

"US Fish & Wildlife begins complete elimination of bee-killing pesticides in Pacific Region": 15 July 2014, *Greenpeace Blogs*

Some good news on the neonicotinoid front: U.S. Fish & Wildlife Service has implemented at plan to phase out neonicotinoids in the Pacific National Wildlife Refuge Systems by 2016. Washington and Idaho are among states affected. USF&W cited "potential broad-spectrum adverse effects to non-target species" as the trigger for this move. Among the effects that USF&W noted even from sublethal doses are: "reduced fitness; reduced production of new queens and workers; decreasing production of females (more than decreasing the production of males); increased parasite loads; suppressed response to diseases and parasites; reduced feeding and/or impaired feeding behavior; delayed nest building; fewer eggs; reduced life span and worker biomass; altered learning ability and orientation/navigation."

Though neonics are not normally used in wildlife refuges, because of wind drift and runoff, they can pose dangers to these areas. USF&W further found that prophylactic use of neonics does not fit the practice of integrated pest management. Between now and 2016, those planning to use neonics on refuge land will have to submit a proposal calculating an acceptable application rate; starting in 2016, these applications will no longer be honored. For links to USF&W's memorandum, including a very detailed explanation of just how neonicotinoids work, visit: http://greenpeaceblogs.org/2014/07/15/us-fish-wildlife-begins-complete-elimination-bee-killing-pesticides-pacific-region/

Photo by Paul Langrock, Greenpeace Blogs

"Home Depot to label plants exposed to bee-killing pesticide: Evidence mounts against neonicotinoids": 10 July 2014, *CBC News*

Not only U.S. Home Depot stores, but also those in Canada will label plants they sell that "have been exposed to neonicotinoids." The retailer's step in part responds to a "Friends of the Earth study that found home garden plants, including "bee-friendly" plants such as Shasta daisy and salvia, contain neonicotinoids." The province of Ontario's agriculture minister announced that Ontario will investigate ways to limit use of neonics by its farmers of corn, canola and soybeans: farmers warned that such a move

could reduce food production. To read more, visit: http://www.cbc.ca/news/business/home-depot-to-label-plants-exposed-to-bee-killing-pesticide-1.2701353

"Our Bees, Ourselves: Bees and Colony Collapse": 14 July 2014, *The New York Times*

Mark Winston, a biologist and the director of the Center for Dialogue at Simon Fraser University, urges human beings to study honey bee collapse to help us avert our own. "[A] core lesson from the bees that we ignore at our peril [is] the concept of synergy, where one plus one equals three, or four, or more. A typical honeybee colony contains residue from more than 120 pesticides. Alone, each represents a benign dose. But together they form a toxic soup of chemicals whose interplay can substantially reduce the effectiveness of bees' immune systems, making them more susceptible to diseases." The writer draws a parallel with pharmaceutical drug interactions in people and comments: "[p]esticides have medical impacts as potent as pharmaceuticals do, yet we know virtually nothing about their synergistic impacts on our health, or their interplay with human diseases."

Winston's laboratory studied canola farms and found that "crop yields, and thus profits, are maximized if considerable acreages of cropland are left uncultivated to support wild pollinators. A variety of wild plants means a healthier, more diverse bee population, which will then move to the planted fields next door in larger and more active numbers. Indeed, farmers who planted their entire field would earn about $27,000 in profit per farm, whereas those who left a third unplanted for bees to nest and forage in would earn $65,000 on a farm of similar size." Winston's findings are about to be published in Bee Time: Lessons from the Hive. To read more, visit: http://mobile.nytimes.com/2014/07/15/opinion/bees-and-colony-collapse.html?referrer&_r=0

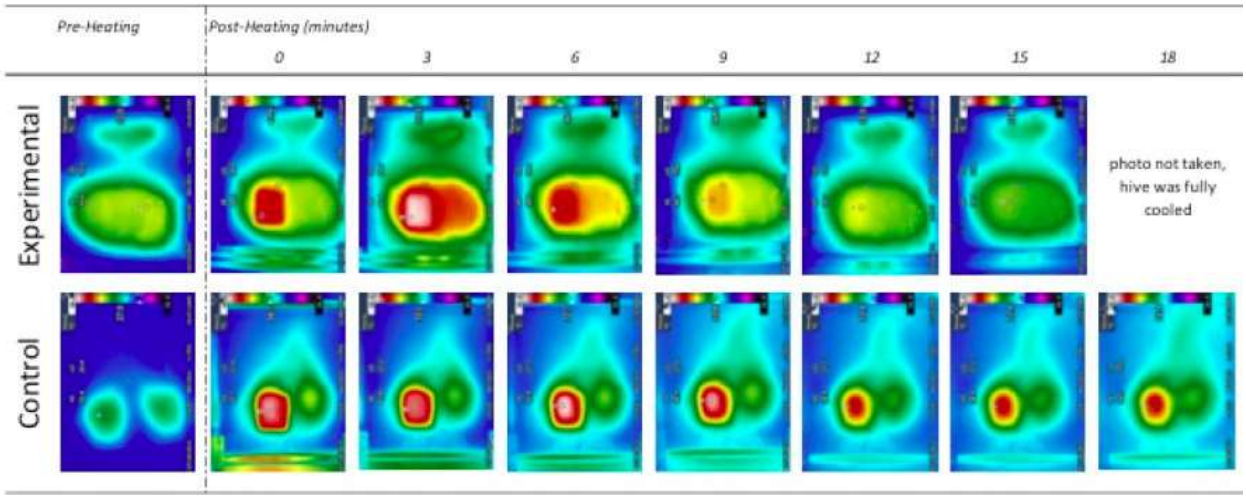
Honey bees need water, too: above, one of our bees slaking her thirst (photo, Susanne Weil)

"Vasculature of the hive: How honey bees stay cool": 23 July 2014, *Science Daily*

A new Tufts University study has shown that adult honey bees share the work of keeping colony temperatures low enough to prevent brood from being overheated. The worker bees "dissipate excess heat within a hive in process similar to how humans and other mammals cool themselves through their

blood vessels and skin." The study supports the theory that honey bee colonies are "superorganism[s] – entit[ies whose] many members carry out specialized and vital functions to keep the whole functioning as a unit." The study notes that "[f] or healthy development, the youngsters must be maintained between 32 degrees Celsius, or 89.6 degrees Fahrenheit, and 35 degrees Celsius, or 95 degrees Fahrenheit. In contrast, adults can withstand temperatures as high as 50 degrees Celsius, or 122 degrees Fahrenheit." Those more heat-tolerant adults work to cool the hive for the developing young.

How do the bees do this? "When temperatures dip, worker bees create heat by contracting their thoracic muscles, similar to shivering in mammals. To protect the vulnerable brood when it's hot, workers fan the comb, spread fluid to induce evaporative cooling, or -- when the heat stress is localized -- absorb heat by pressing themselves against the brood nest wall (a behavior known as heat-shielding)." This was known, but the Tufts study found out how the workers discharged that excess heat: "[T] he worker bees pressed their bodies against the heated surfaces near the brood. Like insect sponges, they absorbed the heat, which lowered temperatures. . . . [U]sing thermal imaging, the scientists observed that temperatures increased peripheral to the heated regions of the hive as the brood nest began to cool. The thermal images clearly showed that the bees had physically moved the absorbed heat in their bodies to previously cooler areas of the hive." The workers did this so efficiently that "[w]ithin 10 minutes of cooling, temperatures in the active hives were down to safe levels."



Thermal imaging of hive cooling (Tufts University / Science Daily)

Two new studies express conflicting findings about the healthfulness of feeding honey to bees:

"Feeding Honeybees Honey May Increase Mortality": 27 June, 2014, *BeeInformed.org*

The Bee Informed Partnership survey results from 2011-12 and 2012-13 have turned up a surprising suggestion: "Feed your honeybees candy, dry sugar, high fructose corn syrup (HFCS), honey, sugar syrup, wet supers or nothing at all, it doesn't matter, you get the same colony loss, in this case, about 23%." The survey data showed that dry modes of feeding – candy boards and dry sugar – had slightly lower losses than those feeding wet modes, including – surprisingly – frames of honey. In 2012-13, the

survey – this time sampling about 557,000 colonies – found that "[t] hose who chose to feed their colonies lost about 45% while those that chose not to feed carbohydrates lost 36%."

It should be noted that these data come from surveys rather than direct experimentation; it should also be noted that the honey feeding results may be connected to feeding bees honey produced by other colonies. To read more, visit: http://beeinformed.org/wp-content/uploads/2013/08/title-carbohydrate-feed.pdf and http://beeinformed.org/wp-content/uploads/2014/03/6.CarbohydrateFeedSummary.pdf

Thinkstock.com

"Scientists Track Gene Activity When Honey Bees Do and Don't Eat Honey" 18 July 2014, *American Bee Journal* and *Bee Culture Magazine*

New research shows "significant differences" in bees' gene activity based on what they eat. The researchers studied "fat body" tissue – which, like our human liver, processes food and filters toxins – in forager bees, chosen because they have "higher metabolic rate and less energy reserves . . . . than their hive-bound nest mates -- making the foragers much more dependent on a carbohydrate-rich diet."

Bees fed honey – as opposed to high fructose corn syrup (sucrose) – "had a very different profile of gene activity in the fat body than those relying on HFCS or sucrose." Genes "that were activated differently in the honey-eating bees have been linked to protein metabolism, brain-signaling and immune defense."

The study supports University of Illinois research May Berenbaum's 2013 findings that "some substances in honey increase the activity of genes that help the bees break down potentially toxic substances such as pesticides." Further, these results " parallel suggestive findings in humans . . . in both bees and humans, sugar is not sugar -- different carbohydrate sources can act differently in the body."

To read more, visit: http://home.ezezine.com/1636/1636-2014.07.18.07.47.archive.html and http://us1.campaign archive1.com/?u=5fd2b1aa990e63193af2a573d&id=d031538bf5&e=e9ff21e0bb.

Comb Honey in jars ~ photo by LCBA Member Linnea Warren. Linnea & husband Cody harvested their first honey this year from their foundationless colonies.

"Honey is a New Approach to Fighting Antibiotic Resistance: How Sweet It Is!" 16 March 2014, American Bee Journal

Some honeys, like manuca, have been used as topical wound dressings, but researchers now think honey could actually help fight infections, according to a study presented at the American Chemical Society's annual conference. Honey fights infections "on multiple levels, making it more difficult for bacteria to develop resistance . . . it uses a combination of weapons, including hydrogen peroxide, acidity, osmotic effect, high sugar concentration and polyphenols — all of which actively kill bacterial cells." Particularly important is "the osmotic effect" of honey's high sugar concentration: "it draws water from the bacterial cells, dehydrating and killing them."

Further, honey can hinder biofilms, which are "communities of slimy disease-causing bacteria." Within those communities, honey seems to interfere with "quorum sensing," how "bacteria communicate," thus lessening virulence and making bacteria more responsive to antibiotics. Perhaps most important, honey "doesn't target the essential growth processes of bacteria. The problem with this type of targeting, which is the basis of conventional antibiotics, is that it results in the bacteria building up resistance to the drugs."

Finally, honey's antioxidants seem to underlie its "broad-spectrum antibacterial, antifungal and antiviral properties of honey": the scientists are testing how honey affects E. coli, among other bacteria. To read more, visit: http://us1.campaign-archive1.com/?u=5fd2b1aa990e63193af2a573d&id=6730d85b7a&e=e9ff21e0bb.

"The Science Behind Honey's Eternal Shelf Life": 22 Aug 2013, *Smithsonian Magazine*

We've all heard how honey from 3000 year old Egyptian tombs is still viable. But why is that so? One reason why is that honey, as a sugar, is hygroscopic, meaning that it "contain[s] very little water in [its] natural state but can readily suck in moisture if left unsealed." To qualify as honey, its moisture must be low, below 18.6%: Amina Harris, executive director of the Honey and Pollination Center at the Robert Mondavi Institute at University of California, Davis, notes that "very few bacteria or microorganisms can

survive in an environment like that, they just die. They're smothered by it, essentially." Honey can't spoil unless it's got a spoiler in it, in short. Honey's acidic nature, too, kills bacteria.

Yet other hygroscopic food sources, like molasses, can spoil – so what makes honey different? It turns out that bees are the key. The stomach enzyme glucose oxidase, which bees mix into honey when they regurgitate nectar, breaks nectar down into gluconic acid and hydrogen peroxide – and hydrogen peroxide, in turn, breaks down bacterial agents. Don't, worry, though, it's only small amounts of hydrogen peroxide! Ancient Sumerian tablets record honey as an ingredient in a third of medicines, as well as used as a bandage "because nothing could grow on it"; today, companies like Derma Sciences market MEDIHONEY: "bandages covered in honey used in hospitals around the world."

But doesn't honey crystallize? Harris explains, "If you buy your honey from the supermarket, that little plastic bottle of golden nectar has been heated, strained and processed so that it contains zero particulates, meaning that there's nothing in the liquid for molecules to crystallize on, and your supermarket honey will look the same for almost forever. If you buy your honey from a small-scale vendor, however, certain particulates might remain, from pollen to enzymes. With these particulates, the honey might crystallize, but don't worry–if it's sealed, it's not spoiled and won't be for quite some time."

To read more, visit: http://www.smithsonianmag.com/science-nature/the-science-behind-honeys-eternal-shelf-life-1218690/#ixzz2uNmziJbo.

"Phony honey a sweet deal for counterfeiters, bad for consumers": 26 February 26, 2014, *Science Daily*

As beekeepers, we don't need to be melissopalynologists – scholars of pollen in honey – to know that over three-quarters of honey sold commercially has all its pollen filtered out to give that crystal-clear look. Now a U.S. Senate bill would "put more stringent requirements on the federal government to ensure the origin of imported honey and compel sellers to label it accurately," based on research by Vaughn Bryant, an anthropology professor at Texas A&M, who tested honey samples from all kinds of stores all over America in a study sponsored by Food Safety News.

Taking out pollen means that honey can't be tracked back to its source, so honey sellers can present fairly ordinary honey as premium types. The FDA plays into this by not requiring pollen in honey sold here. Bryant argues that this provides an incentive for honey fraud. Bryant's "pollen reference collection of 20,000 types from all over the world (worth, he estimates, between $4-5 million)" enables him to ID the pollen in honey samples and find the frauds. This is also critical to protect U.S. consumers from ingesting honey from countries that "have different standards about pesticides and using antibiotics in hives to keep the bees disease-free": hence the U.S.'s strict import laws and tariffs. China's honey fails to meet U.S. standards and so has been trafficked via third party nations who claim it as their own via a process called "transshipping," which is illegal.

Left, Honey Bear (Jamie Chung); right, commercial honey (Center for Food Safety)

Bryant supports Senate bill S-662, which would "require that appropriate U.S. Customs and Border Protection (CBP) agency resources exist to address concerns that honey, as well as contraband archaeological or ethnological material, is not being imported into the U.S. in violation of U.S. customs laws." The agency would have to "compile a database of the individual characteristics of imported honey to verify country of origin and engage foreign governments for assistance. . . .the CBP would also be required to consult with the honey industry to develop industry standards for honey identification and report to Congress on testing capabilities, including recommendations for improvements." Finally, the FDA "would be required to establish a national standard for honey identification."

This new truth in advertising would, ideally, stop "the importation of cheap, bogus honey" and thus support the American beekeeper. Bryant is concerned that "[i]f beekeeping becomes a money-losing business in the U.S., there will soon be fewer bees and hives," Bryant contends. "That, in turn, will greatly increase the cost of food. The result might be oranges or apples, both pollinated by bees, costing $5 each because so few are produced without adequate pollination." To read more, visit: http://www.sciencedaily.com/releases/2014/02/140226165113.htm?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+sciencedaily+%28Latest+Science+News+--+ScienceDaily%29.

"Honey Flavor Wheel: Do You Know How to Describe the Flavor?" 4 Aug 2014, American Bee Journal

U.C. Davis has unveiled its Honey and Pollinator Center's Honey Flavor Wheel. Amina Harris, the Center's director, "brought together a group of 20 people--trained tasters, beekeepers and food enthusiasts--who worked together with a sensory scientist to come up with almost 100 descriptors," Harris said. "This wheel will prove invaluable to those who love honey and want to celebrate its nuances."

As ABJ's description puts it: "The front of the colorful wheel shows the descriptors, including fruity, floral, herbaceous, woody, spicy, nutty, confectionary, caramel and earthy. No longer can you just say "sweet" when you taste honey or "sour, salty and bitter." If it's fruity, can you determine if it's berry, citrus, dried fruit, tree fruit or tropical fruit? If it falls into the confectionary category, can you pinpoint

marshmallow, vanilla, maple, butterscotch, toffee, molasses, cotton candy, crème brûlée, burnt sugar or brown sugar? There's even an "animal" category" where you can opine that your sample of honey reminds you of a barnyard. Retired Extension apiculturist Eric Mussen of the UC Davis Department of Entomology and Nematology, who has coordinated and conducted the annual honey tasting at the UC Davis Picnic Day for 38 years, remembers tasting buckwheat honey in Oregon that reminded him of 'goat.'"

Hopefully those of us who enter honey at the Southwest Washington Fair won't remind our tasters of goat – and the wheel may help us categorize what we taste. To read more and see the original wheel, visit: http://us1.campaign-archive1.com/?u=5fd2b1aa990e63193af2a573d&id=9a4045fee7&e=e9ff21e0bb.

"Congressional house bill 4790 has been referred to the House Transportation and Infrastructure committee for consideration" – from Franclyn Heinecke, WSBA Area 2 Representative

This bill would "encourage and facilitate efforts by States and other transportation rights-of-way managers to adopt integrated vegetation management practices, including enhancing plantings of native forbs and grasses that provide habitats and forage for Monarch butterflies and other native pollinators and honey bees, and for other purposes." Projections show a small chance that HR 4790 will pass, but "if beekeepers are vocal about the crucial need for more pollinator-friendly forage, we can change that outcome." To read the full text of the bill, visit: https://beta.congress.gov/bill/113th-congress/house-bill/4790/text. To read Franclyn's Master Beekeeper paper on weeds and bee nutrition, visit: http://wasba.org/wp/wp-content/uploads/2014/05/Why-honeybees-need-weeds.pdf. Franclyn will be our August 13 LCBA speaker.

ANNOUNCEMENTS & HELP WANTED

Mann Lake is helping beekeeper who lost his colonies in the Carlton Complex Fire; LCBA member Rob Jenkins is coordinating used equipment donations. Thanks to Rob for putting out the word about Ron Hull, a beekeeper near Chiliwist who has lost most of his apiary (to read about his Cougar Canyon Apiary, visit http://honeyfiend.com/apiary-profile-cougar-canyon-apiaries-malott-wa/ . Mann Lake has an account where those so moved can donate (to contact Mann Lake, call 800 880 7694). Ron needs 50 deep boxes & 500 frames to get his operation airborne again. If anyone would like to donate used equipment, please contact Rob (ironimagery@hotmail.com) – Rob just got back from a trip with some equipment for Ron and has more details.

Methow Valley Beekeepers reported that they have come through the fires relatively unscathed, with surprising pockets of forage remaining, though many will be buying lots of sugar to help bees maintain. WSBA has invited them to let us know what help they need: more news as it happens.

Above, Ron Hull at his apiary before the Carlton Complex Fire.

Bee Culture Magazine announces: The 12 Days Of Christmas Carol Contest!

In a lighter vein, this just in from *Bee Culture*: "Send us the 12 days of Christmas, each with a beekeeping theme, and we'll publish as many of the best entries as we have room for in the December issue. There are only a few rules for this contest: (1) Every day has to have a beekeeping theme; (2) spelling, rhyme, rhythm and meter count; (3) your entry has to be sing-able (is that a word?); (4) it has to be original; (5) keep it in the spirit of the season – friendly and fun; (6) all entries have to be here by Midnight, October 1, 2014, no exceptions. You can have as many as 3 different entries. We accept only electronic submissions. Each email must have the name, address, and phone number of the entrant and each entry MUST have 12 Days in the subject line, and each email must have only ONE (1) entry. And send every one of those entries to Kim@BeeCulture.com. That's it. All entries will be judged by a tone deaf Bee Culture staff after midnight that night who have been sampling some Christmas Cheer, kind of early, and maybe some other office folks. We'll see who sticks around.

"Prizes. YES there are PRIZES. FIRST PRIZE – A Life time subscription to Bee Culture Magazine. Value…unknown, but probably more than a couple grand…maybe even more if you're lucky, and young enough. But there's more! We are going to put the winning entry's lyrics ON THE COVER OF THE DECEMBER ISSUE SO THOUSANDS AND THOUSANDS OF FOLKS CAN SEE AND SING YOUR SONG! SECOND PRIZE – A five year subscription to Bee Culture Magazine. Value…about $125 or so, maybe more if the price goes up. THIRD PRIZE – A three year subscription to Bee Culture Magazine. Value…over $100 anyway. So songbirds, get busy. You have only until October First, 2014." http://home.ezezine.com/1636/1636-2014.07.08.12.54.archive.html

Do you have more bees than you can handle? Amy Voie & family want to buy two colonies.
To get in touch with Amy, call 360 508 0038.

August 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.

August WSBA Newsletter: available later this month. Pick up your copy online at www.wasba.org: click on "Newsletters."

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

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