EJ'S NEWS

EJ is East Jefferson Beekeepers Association's Mascot.

Volume 10
Gloria Neal, Editor
November 2021

INDEX

East Jefferson Beekeepers' Meeting

Saturday, November 13th
at The Church United

1820 Irondale Rd.

Port Hadlock

(just north of the laundromat)

Board meeting 9:30 a.m.

New beekeepers Q & A 10 a.m.

Club meeting 10:30 a.m.

THE PREZ SEZ

Dear Fellow Beekeepers,

Elections for officers and trustees were held at our October meeting. The results:

President:	Dave Morris
Vice President:	Rich Thomas
Secretary:	Susi Thomas
Treasurer:	Catherine Slaton
Trustee:	Mike Kelley
Trustee:	Tony Weller
Trustee:	Mike Duncan

Welcome new trustee Mike Duncan and new Treasurer Catherine Slaton. Catherine takes over the Treasurer position from Harry Prather. Harry was one of the founders of EJBA and has been trying to resign from his Treasurer position for at least the past 9 years. He has done yeoman's work keeping track of club finances and teaching the beginner beekeeping classes. Now that Harry is Treasurer emeritus we look forward to his continued participation on the board and the contribution of his wealth of institutional knowledge.

As noted in our last newsletter, we are honored to, once again, have Dr. Tim Lawrence present at our November 13th meeting. Tim is the Director of the Island County WSU Extension Office and one of the state's premiere bee experts. Tim's made several excellent presentations to EJBA and we look forward to hearing from him at our November meeting. That meeting will be held at The Church United, 1820 Irondale Road in Port Hadlock just north of the laundromat.

We don't meet in December but will resume January 8th, indoors at the Chimacum Grange. Our plan is to hold all meetings indoors at least through March. After March it depends on the covid status and our program schedule and need for AV equipment. As noted elsewhere, live beginning beekeeping classes will resume in 2022. This takes us back to our old schedule of board meetings at 9:00 and the general meeting from 9:30 – 10:30 am. Class instruction and more in-depth discussion follow the general meeting.
Dave

NOVEMBER MEETING AGENDA

We have invited Dr. Tim Lawrence as our special speaker for the EJ Bees' meeting on Saturday, November 13. Dr. Lawrence is a world-renowned bee researcher who lives on Whidbey Island and is employed at Washington State University in Pullman. He has been keeping bees for over 30 years. His presentation will be on the fascinating topic of drones and drone congregating areas.

REMEMBER: We meet at the Church United in Port Hadlock.

2021 EXECUTIVE BOARD

President: David Morris

Vice President: Rich Thomas

Secretary: Susi Thomas

Treasurer: Harry Prather

Trustees:

Mike Kelley

Tony Weller

Catherine Slaton

ON-LINE CLASSES
Mike Kelley, Rich & Susi Thomas

APPRENTICE CLASSES
Harry Prather

COMMUNICATIONS
Susi Thomas

ACTIVITIES-EVENTS
Rich Thomas

WEBSITE –EJBEES.ORG
Mike Edwards

BLOG –EJBEES.COM
Mike Kelley

SWARM CORDINATOR
Tony Weller

ASSETS MANAGER
Catherine Slaton

MEDIA SPECIALIST
Jim Gurney

NEWSLETTER
Gloria Neal

LETTER FROM
THE EDITOR

Hello EJ Beekeepers:

Hoping with our blustery, windy September days and the downpours in between, you have been able to get your colonies winterized and the girls snug in their hive boxes. If not, it's not too late.

We are dedicating this newsletter to many of the methods our members use to give our colonies the best chances of survival through the cold months.

There are also some great ideas included in the October newsletter.

Mites are the number 1 cause of honey bee losses during the winter. A close second is moisture in the hive. That means no syrup feeding during the cold months for emergency feeding. Fondant or sugar cakes are best during this time. C &H sugar cubes are also safe to use.

Winter patties can be fed, but stay away from pollen patties, since pollen can sometimes start your queen laying eggs, and this is not the time for brood raising. It will take a lot of the colony's winter stores to feed themselves and the brood.

This is also the time we need to be checking and repairing any of our bee equipment and watching for wax moths before they get started on the stored honey comb frames. Check out the articles on wax moths in this newsletter.

Monitoring the entrances by brushing away any snow accumulations and keeping them cleared of dead bees is important. Further decreasing the entrances will give your colony more protection against robbers and tiny rodents looking for a warm place to reside.

That's the buzz for November.

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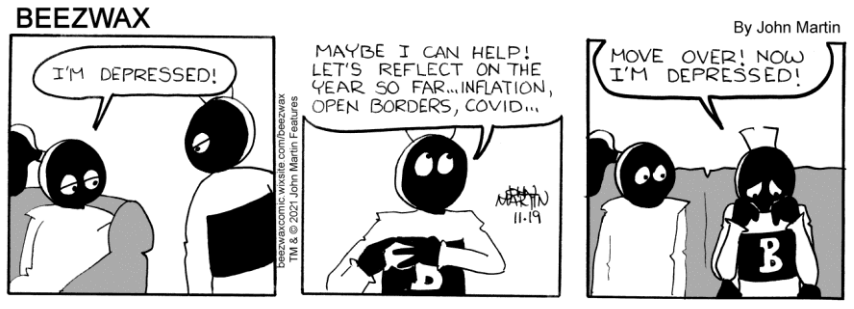


WAX MOTH LARVAE IN YOUR BEE FRAMES?

Moths are fascinating – fluttering at your lighted window, or motionless on a dark wall. But when they're rampant in your flour bin or (cue Psycho music) invading your frames, not so much. A keen eye (or two) and a bit of maintenance is key to keeping greater wax moth (*Galleria melonella*) and lesser wax moth (*Achroia grisella Fabricius*) at bay.

Moths are opportunists, entering hives without sufficient guard bees and laying eggs, preferring comb formerly used by brood or having contained pollen. When eggs hatch, larvae tunnel through comb and spin within these tunnels, destroying comb. Incorrectly stored frames with drawn comb are at risk for infestation, too.

Adult wax moths cause no damage to comb, because their mouthparts are atrophied. They do not feed during their adult life. Only larvae feed and destroy comb. However, adult wax moths and larvae can transfer pathogens of serious bee diseases, including foulbrood and nosema.

Solutions range from the simple heating or freezing of frames, to using a carbon dioxide fumigation room. Simpler fumigation uses readily accessible chemicals like acetic acid or Para-Moth (paradichlorobenzene) within stacked hive boxes partially filled with frames.

Just as varroa is best managed by IPM (integrated pest management), so too are wax moths.

1. Maintain vegetation around hives. Discourage adult wax moths – crop grasses as low as possible.
2. When storing frames in the open, leave adequate space between frames to allow light to reach all parts of frame.
3. Chemically treat frames with approved agents. Never use naphthalene moth balls or crystals. Make sure chemically treated frames are sufficiently aired before adding back to hives.
4. Use high heat or freezing temperatures to destroy eggs and larvae.

Please see links for details. Good luck.

https://beeaware.org.au/archive-pest/wax-moth-18/#ad-image-0

https://beekeepclub.com/how-to-treat-wax-moths-in-beehives/

https://www.clemson.edu/extension/beekeepers/fact-sheets-publications/wax-moth-ipm-publication.html

https://entnemdept.ufl.edu/creatures/MISC/BEES/Achroia_grisella.htm

https://www.honeybeesuite.com/can-i-use-mothballs-in-my-hives/

https://www.bee-craft.com/articles/safe-use-and-handling-of-acetic-acid

Catherine Slaton

TIPS & TRICKS from Susi

November 2021: A Monthly Offering of Useful Hints for Beekeepers

- After autumn syrup feeding, weigh your hives before the quilt box and candy board go on. When you compare the weight in spring, you'll know approximately how much honey your bees used through the winter.
- Be sure to check for damp wood shavings in your quilt box once a month and replace with fresh, dry shavings as needed.
- Use a wire coat-hanger to sweep dead bees out from the bottom board.

If you would like to submit your own tip or trick, please send it to richandsusi@cablespeed.com .

East Jefferson Beekeepers Association

GIVE YOUR CANDY BOARD A LIFT

If you are using candy boards placed directly on the frames of your hive, it can create a couple problems: (1) the candy board will inevitably sag in the middle and can crush bees underneath; (2) the bees below can access candy only from the spaces between the frames under the board.

To keep these things from happening, put two shims directly on the frames to hold the candy board up. Use shims about 6" to 8" long and 1/4" to 3/8" thick, placed perpendicular to the frames and about 6" from either side of the interior hive body. The shims will prevent the candy board from crushing bees underneath, and allow bees full access to the candy board from below.
Rich

"Ever Get Bit By a Dead Bee?"

This was the question posed by the old rummy, Eddie (played by Walter Brennan), in the 1944 film, *To Have and Have Not,* starring Humphrey Bogart. Eddie's question, which was directed to the almost unknown, 19-year-old actress, Lauren Bacall, in her film debut, came home to the Thomas household when Susi, while harvesting some basil plants, was stung on the hand by a "dead" bee. The bee was hidden where it had perched overnight or longer among the lower leaves of one plant. Although it was moribund and could only very slowly move one leg, it was still just barely alive enough to deliver a painful sting as its final statement.
Rich

Honey bees band together to form a cluster. The cluster moves together as the bees vibrate their wing muscles to generate heat. The bigger the cluster, the warmer the bees. The warmth will rise and warm the honey near them, making it accessible to the cluster.

In the case of a double deep colony they will need about 60 pounds of honey to feed themselves through the winter.

Hive Considerations for Beginners

---Rich Thomas

Autumn through winter is the time of the year to start planning for the upcoming beekeeping tasks ahead. Because new beekeepers often ask me which hive style to choose for their apiaries, I will explain a few advantages and disadvantages of the different hive types.

Wooden Langsthroth or Dadant (jumbo size Langsthroth style) are the standard throughout most of the world, but there are many variations to consider.

One consideration is size--and accordingly, weight. The standard Langstroth hive consists of two deep hive bodies for the brood chamber, with honey supers on top (Fig. 1). The brood chambers (called "*deeps*") are approximately 9½ inches deep and can weigh up to 80 lb each when completely full and can therefore be difficult to manipulate.

To get around this problem, some beekeepers make up a hive with all Western (medium) hive boxes approximately 6½ inches deep, using three of these boxes for the brood chambers (Fig. 2 below).

← Top (white)
← Western honey super
← Western honey super
← *Queen excluder (white line)*
← Deep brood chamber
← Deep brood chamber

1. Langstroth: deep brood chan western honey supers

← Top
← Western honey super
← Western honey super
← *Queen excluder*
← Western brood chamber
← Western brood chamber
← Western brood chamber

2. Langstroth: all Western boxes for honey & brood

In Europe, Dadant hive bodies are in wide use. These jumbo-sized brood chambers are approximately 12½ inches deep – that is, 30% larger than the standard Langstroth hive body (Fig. 3).

3. Dadant jumbo brood-box hives…….compare frames of standard vs. jumbo size

It is also possible to use a single deep hive body for the brood chamber, but this is not recommended for beginning beekeepers in our area.

Another consideration is built-in insulation. Insulated hives are also in use in western Washington, and some beekeepers swear by them. They are usually made of a plastic outer cover with an insulated core, and some contain 8 frames instead of 10 to make up for the space taken by insulation (Fig. 4). The internal insulation helps to protect the bees from heat and cold. Insulated hives cost about 40% more than wooden hives.

4. Plastic, insulated hive

5. Insulated plastic top and bottom "kit" made for upgrading a wooden hive

In general, insulated hives cannot be used with wooden hive bodies, and one must be careful that the parts will actually work together, because the dimensions are different. However, one company sells a plastic bottom board with pollen-catcher that is specifically sized to fit wooden boxes (Fig. 5, above).

Conclusion. As a beginning beekeeper, you have a number of decisions to make before receiving your bees, whether they will be purchased or acquired as a swarm. These choices will shape your apiary, and affect both your beekeeping practices and your pocketbook.

DR SAMUEL RAMSEY WEBINAR RECORDING AVAILABLE NOW

WSDA hosted a webinar in partnership with Dr. Samuel Ramsey and Washington State University to teach about *Vespa mandarinia* (Asian Giant Hornet) and the threat it poses to honey bees. This webinar showcased Dr. Ramsey's experiences beekeeping with the hornets in their native range in Thailand. Beekeepers also heard from Dr. Kelly Kulhanek (WSU) and learned how to distinguish hive losses caused by Asian giant hornets from those by other causes. Use this link to watch a recording of the webinar: https://www.youtube.com/watch?v=nSs_-vTEHpQ .

Bee Biology: The Bee's Eye View

--Susi Thomas

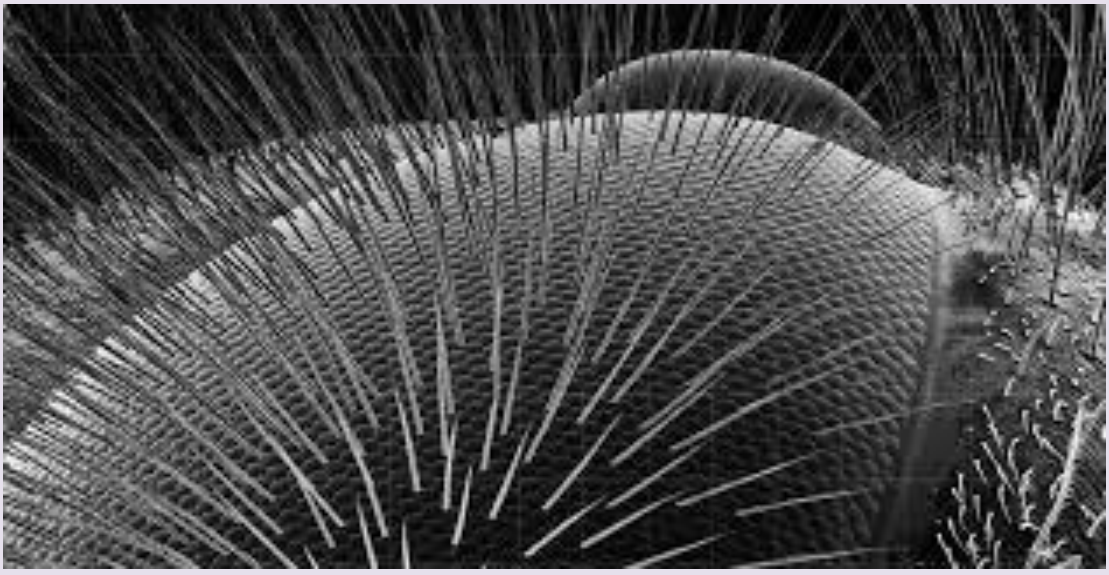
Bees have amazing eyes--all FIVE of them! There are two big compound eyes, and three small simple eyes.

In the center of the bee's forehead, there are three round, single-lensed eyes called *ocelli.* They do not provide any detailed images—rather, they detect intensity of light, including ultraviolet (UV) frequencies. Input from these simple dome-shaped lenses is important for maintaining stability during flight and for navigating, also to note the approach of a predator overhead and to locate flowers via their UV markings.

1. Honey bee's three simple and two compound eyes

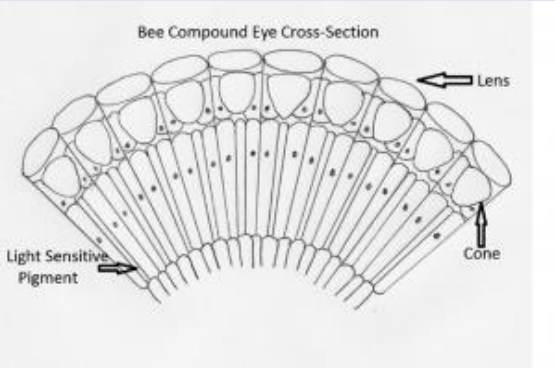
In contrast, honey bees' compound eyes are a prominent feature and are "designed" through evolution to provide detailed imagery. Each one is made up of thousands of tiny individual lenses (*facets*): about 7000 in a worker's eye; 4000 in a queen's; and 8500 in each drone eye. (*Why so many for drones? Sharper vision helps in their competition to spot virgin queens approaching the drone congregation area---and mating is accomplished in flight*.)

At high magnification, facets appear to fit together like tiles in a floor, each set at a slightly different angle due to the curvature of the whole structure. The hairs set among the facets are thought to report wind direction to assist in navigation.



2. Honey bee worker's compound eye, upper portion, at 280 X magnification. Behind it, notice a single ocellus that appears here as a smooth black dome (Scanning electron micrograph by D. Scharf)

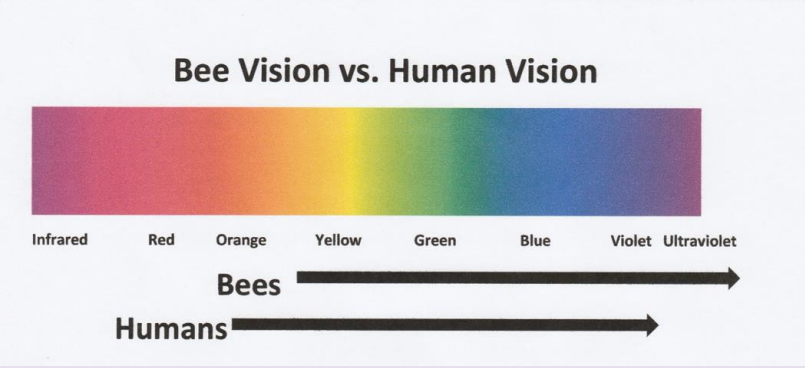
Each lens sits atop a tube containing a cone to focus light onto sensitive pigments, together forming a unit called the *ommatidium.* The information from each of these is transmitted to the brain and processed instantly into a single image – not a mosaic, but more like a detailed "Pointillist" painting.



Each ommatidium of a bee's compound eye is set at a slightly different angle on the curved surface and consists of a facet (lens) atop a tube containing a light-gathering cone and light-sensitive pigments. (Diagram: S. Riddle)

These compound eyes are particularly good for detecting patterns that identify flowers, other bees, and features that serve as landmarks---also for noting movement, as a shape or shadow traverses a pathway across a series of facets.

They also see color! Unlike humans, who see a spectrum of red to purple based on a set of red, blue, and yellow photoreceptors, honey bees perceive a range from yellow through ultraviolet (UV), using their three photoreceptors for yellow-green, blue, and UV. With no specific receptor for red, they do not see that color at all, although they can pick up reddish wavelengths in the orange-yellow range. They also see a special hue called "bee purple" composed of yellow and UV light combined.



3. Visual spectra of frequencies, bee and human

Red flowers appear as black; however, many red flowers also have some yellow or UV markings that honey bees can follow. Indeed, most flowers offer a system of dots, arrows, or lines in the visible or the UV portion of the spectrum indicating the pathway to nectaries and pollen. As bees come close to open blooms, the floral fragrances attract and inform them about the content and quality of nectar each one offers.

4. Foxglove has visual and UV nectar-guide dots; rudbeckia shows no visible marks, but has arrow-like UV markings; alstroemeria's bold lines point to its nectar and pollen. Images: Pinterest, and Paolo ("Macro-roni") on Flickr

There are other remarkable features of bee vision that make foraging and navigation efficient.

For one thing, with all five eyes they can see polarized light from the sun, and accordingly, can determine the sun's position even when it is obscured by clouds. They use that information along with wind direction, landmarks, and other data to travel their foraging routes and return home again.

In flight, bees see in three-dimensional view, and can judge depth and distance. While flying at their fastest travel-speed, they actually see in black and white, and color only comes into focus as they slow down a little bit to approach a target. Nonetheless, they perceive color five times faster than we do—1/300th of a second versus our 1/50th. As a result, a bee in flight can distinguish one individual blossom from another once its color vision is operating, whereas we might see only blur of color (*imagine glancing at a flower-filled meadow as you whiz past it in a car…..whoosh!*).

Further, the honey bee's "flicker threshold" (the rapidity with which their visual system can recover from stimulation to respond again) is also more rapid than ours, allowing them to more readily identify objects in motion than we can. This increases their ability to identify preferred blooms while flying at a good clip and to easily land on—and pollinate—flowers that are nodding in the breeze.

5. Bee's eye view of flowers while bee is in flight

Back in the hive, the forager communicates to its nestmates, providing a road-map to find rich food sources by performing a waggle dance using all the information gathered through visual, chemical, and other senses concerning direction, distance, even landmarks and floral fragrance.

Five eyes, two antennae, and a multitude of sensory hairs on the bee's body from head to toes are fine-tuned to the world through which the bee travels, and which it enriches by its task of pollination along the way.