



EJ'S NEWS

EJ is East Jefferson Beekeepers Association's Mascot.

Volume 10

Gloria Neal, Editor

September 2021

INDEX

Editor's Notes.....Pg.2
In the GardenPg.3
WSDA Conference.....Pg.3
Tips and Tricks.....Pg.4
Time to Treat for Mites.....Pg.4
Bee Biology.....Pg.5
Varroa Mite Biology.....Pg.8
Sage Advice.....Pg.8
Favorite Links.....Pg.9
Beekeeping ProductsPg.10

East Jefferson Beekeepers' Meeting

Saturday, September 11th
Wild Olympic Salmon shelter
at

HJ Carroll Park
in Chimacum:

Highway 19
between Chimacum School
and Ness Corner Road.

Please bring your own chair.

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,

A special thanks to Rich and Susi for organizing our August meeting and picnic at Fort Worden.

For the past 15 years "Bee Informed Partnership" has monitored colony loss and management across the U.S. The data input is voluntarily provided by three classes of beekeepers: backyard (<50 colonies); sideliner (51-500); and commercial. Their annual year runs from April 1 until March 31 the following year. This past year 3,347 beekeepers managing 192,384 colonies provided input. Loss rates were calculated as the ratio of the number of colonies lost to the number of colonies managed of that defined period. Many EJBA members provided input to this survey and have for many years.

During the past winter (October – March) 32.2% of managed colonies were lost, which was significantly higher than the past winter. During the summer (April – September) the estimated loss rate was 31.1% which was a bit lower than the previous year. Over the entire year the loss was 45.5%, which was the second highest since records were kept. Commercial beekeepers report comparable losses summer and winter, while backyard and sideliners report much larger losses in the summer.

Naturally, issues with Varroa ranked highest as the cause for loss. Not too far behind were queen issues and starvation. For more information and a wealth of facts see: <https://beeinformed.org/citizen-science/loss-and-management-survey/>.

Dave

SEPTEMBER MEETING AGENDA

Mike Duncan- Wintering-over Nucs

Rich and Susi will have some valuable information on varroa mites and treating your colonies

Gloria Neal- wintering-over a weak colony

2021 EXECUTIVE BOARD

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NEWSLETTER

Gloria Neal

LETTER FROM THE EDITOR

EJ Beekeepers...

This year has been an incredible year for honey production but also many reports of swarms.

This fall has also been high on the list of robbing encounters for many beekeepers due to the long period of nectar dearth we have experienced. We have all been on high alert to keep our colonies safe from these attacks. Closing down our entrances has helped, being careful not to leave any pieces of honey scraps or syrup near the colony is also important. We all need to take extra precautions during a nectar dearth, especially!

This fall has seemed to be an extra long dearth and has led me to wanting to know more about identifying when we are in that situation. A nectar dearth is any time that plants slow down or completely stop nectar production. It has been very encouraging to learn some of the clues to knowing when we are in a nectar dearth.

Some signs are :

Lack of rainfall, robbing, aggressive behavior, bees in unusual places, bees checking the cracks between boxes, no nectar in comb, no new eggs or larva, no new wax, and bees visiting the same flowers again and again.

One that was new to me, but very clear is that your normally sweet bees seem to be more aggressive. They even harass you when you are other places in the yard, buzzing around your head, a lot like a wasp would. Normally they have more important things to do, but during a dearth I guess they are just not happy.

So I think it will be a little easier to listen to my bees, knowing what I learned this year.

Hoping September will be prosperous for you and your bees!

That's the buzz for September.

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or gloria@tarboovalleywoodenware.com

BEEZWAX

By John Martin



IN THE GARDEN

Careful what you wish for. As in: Wish I knew where the yellow jacket nest is so I could place a trap nearby. All it takes is a goat, and a maple tree just on the other side of slap-dash fence to locate a nest. I headed towards Mab to shoo her back towards the barn. Why was she so playful, kicking her back legs up, throwing her head around, and the other goats too. Silly creatures I thought, and – OH NO – there's a twister of mad somethings rising up from an old stump, and *I gotta get out of this place*, as Eric Burdon once sang.

With a cold chunk of onion on my upper lip I headed to the barn to check on Mab and the other goats for signs of allergic reactions. A little swelling under one eye on Mab. A stinger in one ear that Mab refused to let me touch. And dang my lip hurts! Goats fine, I googled home remedies for insect stings. Pure lavender oil did nothing. Calendula and arnica: ditto. I moved to my mainstay: Ice, Tylenol, and Benadryl. With pain and swelling treated, I searched for methods to keep wasps from building nests and/or bothering you in the garden:

1. In Trees: Hang paper lunch bags stuffed with crumpled newspaper from branches. Wasps will not construct nests where they think one already exists. You can also purchase wasp nest decoys that look more like a wasp nest than paper bags. These along with wasp traps need to be hung in late winter prior to the queen emerging.
2. House and garden: Plant thyme, peppermint, citronella (may survive mild winter in our 8B zone), wormwood, lemongrass, pennyroyal, sage, rosemary, geranium, chamomile, thyme, fennel, wintergreen, bay and sweet marjoram. Just don't plant any of these in with the goats as they will mistake them for snacks.
3. There are also mint-based sprays to apply in the garden, on decking, in and around garbage cans, etc. to make your yard less palatable to wasps looking to homestead. Advertised as long-lasting.

Off to the hardware store for a peppermint-based spray for wasp eradication. (The hose down the entrance hole never works for me.) How nice that we beekeepers have protective suits that will make sneaking up on the nest in the dark less stressful. – *Catherine Slaton*

<https://www.doh.wa.gov/communityandenvironment/pests/beesandwasps>

<https://s3.wp.wsu.edu/uploads/sites/1384/2016/07/Yellowjackets-and-Paper-Wasps.pdf>

<https://www.peninsuladailynews.com/crime/two-accused-of-starting-maple-fire-amid-tree-poaching/>



Washington State Beekeepers' Assoc. Pacific Northwest Beekeeping Conference

Saturday, October 2 – Sunday, October 3, 2021
at the new WSU Honey Bee and Pollinator Facility
Othello, Washington

- Both *in-person* and *virtual* participation available
- 300+ Expected attendance
- 20+ Speaker presentations on science & hobbyist tracks
- Keynote speaker: Steve Sheppard, WSU Department of Entomology
- Overnight, on-site camping for RVs & tents
- Catered refreshment breaks
- No-host mead bar – 3 classic meads + a special limited-edition WASBA mead
- Silent/online & live auctions
- Saturday evening dinner & social hour
- All profits go to WSU honey bee research

To purchase tickets for VIRTUAL or IN-PERSON participation, to reserve a campsite, buy dinner tickets, etc., please visit the website: www.accelevents.com/e/WASBA2021PacificNorthwestBeekeepingConference

TIPS & TRICKS -- from Susi & Rich

September 2021: a monthly offering of useful hints for beekeepers

- *If you are stung on a part of your bee inspection clothing or gloves, remove stinger immediately and smoke the area of the sting to mask any pheromone.*
- *Make bee candy for late winter/early spring emergency stores: combine 6 lb sugar + ½ cup water. Mix and press into ½-inch galvanized mesh for a candy board.*
- *One method to store frames over winter is to stack 5-6 boxes of frames with a top, and place a paper plate of "PARAMOTH" crystals in the top-most box.*
 - ✓ *PARAMOTH is safe for honey bees. DO NOT use household naphthalene mothballs!*
 - ✓ *Use appropriate PPE when handling crystals.*
 - ✓ *Check every 3 or 4 weeks and replenish crystals as needed (they dissipate)*
 - ✓ *Be sure to give the frames a good airing-out before using them in hives again.*
- *If you treat hives with Mite Away Quick Strips, be sure to seal off the screened bottom board.*

*If you would like to submit your own tip or trick for possible future inclusion, please send it to richandsusi@cablespeed.com .
East Jefferson Beekeepers Association*

Beekeepers,

It is time to treat for mites. Your honey supers should be off, or ready to come off. As soon as this is done, you must treat for mites unless you have strictly adhered to a queen-trapping program.

This year, I have rigorously rotated drone mite-trapping frames, but this has not been sufficient. The first treatment with Mite Away Quick Strips (MAQS) yielded a mite drop of over 1000 mites in the first 16 hours in each of two hives. I also had very high numbers after doing alcohol washes on these two hives. The bees in these colonies appear normal and healthy, with no deformed wing virus and no mites visible on the bees, but I have been finding a steadily increasing number of mites in the drone mite-trapping combs. These high mite counts have surprised me.

My program for mite treatment is as follows:

- Sept. 01 MAQS with sticky-board mite counts
- Sept. 14 Oxalic acid (OA) vapor
- Sept. 21 OA with sticky-board mite counts
- Sept. 28 OA with sticky-board mite counts
- Oct. 03 MAQS With sticky-board mite counts
- Oct. 17 OA vapor
- Nov. 01 OA vapor
- Nov. 15 OA vapor with sticky-board mite counts

Make sure that if you treat with MAQS that you close off the screened bottom board.

Rich

Bee Biology: The Bee's Antennae

Susi Thomas

What kind of tool can serve as a nose, ears, fingers, taste buds, weather station, smoke alarm, sugar-analyzer, communication center, speedometer, compass, and much more—all rolled into one?

It's a pair of graceful, practical, and indispensable honey bee antennae, perfected many millions of years ago, and built right into the bee's adult form.



The bee's two antennae attach to the front of the head by way of ball-and-socket joints (Image: Ian Stell)

Dancing in the Dark – A honey bee forager recruits her nestmates to find pollen or nectar in a particular patch of flowers by doing a “waggle dance” in the dark interior of the hive. How do other foragers learn where to go, how far to fly, and what to find there without actually *seeing* the performance?

They use their two antennae to hear, rather than to view the dance. The dancer's wagging motion causes sound waves to travel through the air inside the hive, and these vibrations cause a specific degree of deflection of the antennae.

The sensation is transmitted from the tip of each antenna to a membrane in the middle section, called the Johnston's Organ, which vibrates something like an eardrum and sends the data on to the bee's brain for analysis and reaction. (*This special organ can also detect electric and magnetic fields, and speed of flight, by the way.*)

Further, the dancer carries molecules of floral fragrance along with pollen particles on her body, both of which the attentive audience can smell via chemical sensors, also located on the antennae.

That's not all! Once the foragers leave the hive and fly off to find the food source described in the dance, they gather information using their antennal sensors during the flight to find the destination and to evaluate the sweet reward before they land. “OK, I found the flower, but where's the nectar?” Tactile hairs at the antennal tips detect textures, bumps, or other physical clues that tell them how to enter each different type of flower, which, along with visible dots and lines, lead the bees right to each blossom's nectary.

[continued on page 6]

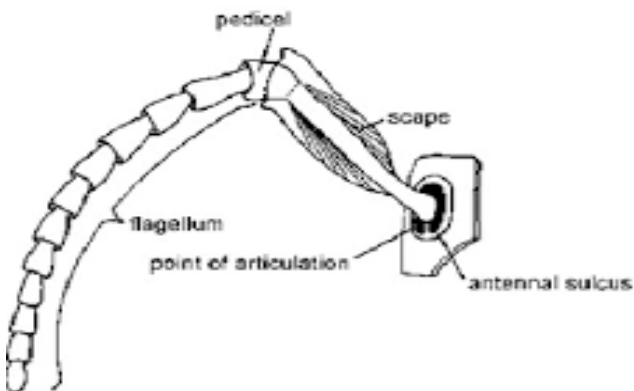
Bee Biology, cont.



Honey bees find the nectary in each kind & shape of flower: (a) physostegia; (b) fuchsia; and (c) aster (images: L. Leinen; Quickcrop; C. Casey)

Sensors by the Thousands – There are literally thousands of receptors of various types located mostly on the outermost segment of the three-part antennal structure that respond not only to sound, odors, and the taste and concentration of sugar, but also to touch, and to other physical parameters of the environment, such as gravity, temperature, humidity, carbon dioxide concentration, and wind speed, for example.

Just about everything the bee needs to know is discovered through these special sensory data-collection tools, and the bee constantly modifies its behavior according to the input.



*The bee's antenna has three sections: the segmented **flagellum** holds most of the sensors; it is attached to the short second section, the **pedicel**, by an elbow joint, which then attaches to the third section, the long, straight **scape**. The scape has a rounded end that fits in a bowl-like depression on the bee's head, forming a classic "ball and socket joint" that lets the antenna rotate in all directions, controlled by a set of four muscles. (Diagram: Entomology for Students Blog)*

Sensory receptors are classified by their shape and function: (1) *hairs* for touch, (2) *plates* for chemical and light detection, and (3) *pits and pegs* for chemoreception, which includes tastes and smells, and the pheromones that make up the chemical language for bee communication. They are distributed in a specific pattern of locations on the outer surface of the flagellum. For example, there is a tuft of tactile-sensory hairs at the very tip of each antenna, used to feel surface textures.

Each worker antenna is estimated to have ~3000 chemoreceptors. The queen has about 1600 on each antenna, and the drone has 300,000, because drones rely on the sense of smell as well as on sight to detect virgin queens as they arrive in the mid-air drone aggregation area. Further, the male (drone) flagellum has an extra segment: 11 for the drone flagellum, but only 10 for that of all female honey bees, including the queen.

[continued on page 7]

Bee Biology, cont.

As Clean as a Whistle – Because the bee’s antennae are absolutely vital to the insect’s existence, they must be kept clean and functional. A special tool for that purpose is built into each of the front legs – isn’t that handy?! It consists of a set of bristles lining a joint that can be closed to perfectly wrap around one antenna and brush it clean as the bee draws it from base to tip through the circle of stiff hairs.



Built-in antenna-cleaning tool on the honey bee’s foreleg –see inside **red circle** (Image: R. Berlew)

Life in the Unlighted Hive – Although you artificially bring light into the hive when you open it for inspection, remember that it is otherwise always dark in the interior, and therefore visual signals are not practical or useful. You’ll notice that an important part of the bees’ communication is carried out by touching one another with their antennae, along with exchanging chemical and sound messages. It makes perfect sense in that environment!

Imagine how all the complex tasks of colony life in the hive are coordinated and carried out without benefit of sight: building wax comb, which requires detecting the precise dimensions of a cell under construction; processing and packing pollen and nectar into cells; caring for eggs and brood as well as for the queen; distributing water, food, and pheromones among all the colony members; identifying dead nestmates for removal from the hive; and on and on---a multitude of jobs and messages all requiring information that is taken in by sensors on the antennae.

Accordingly, the bee’s antennae are in constant motion, bringing in a continuous flow of data to guide every move and activity, and even the timing of certain physiological changes. Even our smartest mobile phones can’t quite compare to these marvelous appendages, which must be among the most wonderful, handiest and dandiest gadgets Mother Nature ever created!



VARROA MITES ARE STILL THE #1 CAUSE OF COLONY COLLAPSE IN OUR APIARIES

(Adapted from Purdue University Cooperative Extension Service)

VARROA DESTRUCTOR LIFE CYCLE

1. Mite enters cell of a 5- to 6-day-old larva.
2. Mite is trapped in larval food.
3. A worker cell is capped on the Day 8 after the queen deposits an egg; a drone cell is capped on Day 10.
4. Mite starts feeding on the larva after the cell is capped.
5. The first mite egg is laid 60-72 hours after the cell is capped, and it will become a male. Up to 5 additional eggs, which will become female mites, are laid at 30-hour intervals. Egg development takes about 10 days.
6. A protonymph emerges from each egg and develops into a deutonymph that becomes an adult.
7. Female offspring mate within the cell.
8. Worker bees emerge from the cell 21 days after the queen lays the egg, whereas drones emerge 24 days after the egg is deposited.
9. Gravid mites leave the cell when the adult bee emerges. Male mites and immature juvenile females die within the cell, or emerge and die soon thereafter.
10. Mites move onto nurse bees, and the adult bees spread mites by close contact.
11. Mites feed on nurse bees for 3 to 10 days.....then transfer from nurse bees into brood cells.

**12. MITE ENTERS THE CELL AND THE PROCESS IS MULTIPLIED AGAIN AND AGAIN,
UNLESS YOU MEDICATE YOUR BEES.**

Remember, If you have honey bees, you have varroa!!

SAGE ADVICE ON MITE DROP

Here is a graph from a presentation made by Dr. Büchler to one of the beekeeping associations in the UK. It shows *the natural mite drop* in a healthy bee colony, month by month from June until December. The "sage advice" from this graph is that in August and September, as you can see, the mite drop should be no more than 3 or 4 within a 24-hour period. If you see over 4 in your counts, keep treating!



Thanks to Rex Robertson
for this graph.

Check this link for a mite calculator:
<https://nationalbeeunit.com/public/BeeDiseases/varroaCalculator.cfm>

Favorite links, ETC.

Thanks to Tony Goldenberg for sharing this video of an Asian Giant Hornet Nest!

<https://www.youtube.com/watch?v=lz0wi5GPIQg>

Washington State Department of Agriculture, USDA APHIS, and the Oregon Department of Agriculture teamed up to locate the first Asian giant hornet nest of 2021 in the U.S. This is video of the hornets entering and leaving the nest.

Read the press release at

<https://agr.wa.gov/about-wsda/news-an...>

from Susi Thomas...

"Scientific Beekeeping" is an excellent technical, scientific website that offers research reports and articles about beekeeping by Randy Oliver, an author who writes for the American Bee Journal. He describes himself as a "data over dogma" guy. You can learn a LOT from reading through his archive of articles going back many years.

**Scientific Beekeeping –
Beekeeping Through The Eyes of a Biologist**



From Tony Weller

□

An interesting little video from Japan, how one beekeeper is keeping his honey bees safe from the Asian Giant Hornets.

<https://youtu.be/RX3VRZsuDGO>

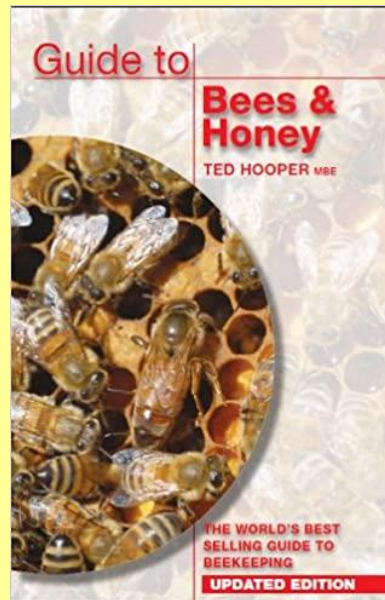
"Honey Bee Suite" is a blog by Rusty Burlew, a Master Beekeeper who lives in Western Washington. She has a section for beginning beekeepers, information about native bees, and articles on various topics of interest. Her style is quite accessible, not as technical as some sites such as "Scientific Beekeeping," but she has a similar attitude, believes in science, data from experiments and field trials rather than in myths or "my uncle did it this way for 93 years in the old country..."

Susi

Tony's recommendation (above) is an interesting and satisfying video about trapping Asian Giant Hornets (AGH) in Japan. I saw many videos like this 2 years ago when I was researching AGH when it first appeared here. There are quite a few other mitigation devices already in place in Asia, such as trapping bottles and trapping screens for the hive fronts, but the main defense is to strictly limit the size of opening to the hive, denying the hornets access to the interior. Also, Dr. Tim Lawrence said in a video last year that this hornet is not anything like Varroa in terms of decimating bee populations.

Thanks for the find, Tony.

Rich



Still a great reference book for beekeepers.

Rich & Susi

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