Williamson County Area Beekeepers Association

NEXT MEETING:
TUESDAY May 26th
7:00-9:00 Program
On-Line Meeting only

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Due to the ongoing COVID-19 pandemic, we are going to have our May member meeting virtually at 7 pm May 26th via "Zoom" meeting software.

This will allow up to 100 WCABA members to listen in and watch our Beekeeping 101 session as well as conducting a Q&A.

You do not need to sign up for an account to join the meeting - just a device and internet connection are required.

If you are you planning to join from an iPhone or iPad, be sure to download this application first: https://apps.apple.com/us/app/zoom-cloud-meetings/id546505307

We look forward to seeing you Tuesday night @ 7PM!

Join Zoom Meeting

https://us02web.zoom.us/j/88001406007?pwd=WVZiLzI5R-00vUGEyQjZ2SzloUlBldz09

Meeting ID: 880 0140 6007

Password: 096986

Dial by your location

+1 346 248 7799

Meeting ID: 880 0140 6007

Password: 096986

Find your local number: https://us02web.zoom.us/u/kcSXt-TAZ1u

Is This A Big Deal? Sure is, for Bees!

from Phil Ainslie, President WCABA

This is a genuine photograph of Asian giant hornets.

A 2010 article from National Geographic described these hornets as “highly efficient killing [machines]” that were approximately 2 inches long with a 3-inch wingspan. Although people have died from this hornet’s painful sting, the insects are only “highly efficient killing machines” when it comes to bees.

The Asian giant hornet (Vespa mandarinia) has arrived in North America. In the past several days photographs and videos have surfaced showing how viciously this insect has attacked honey bees elsewhere in the world: it crawls into hives and rips off the heads of bees in large numbers—making its supervillain nickname, “murder hornet,” feel disturbingly apt. U.S. government agencies and local beekeepers have sprung into action, hoping to eradicate the hornet—thus far seen just in Washington State and nearby Vancouver Island—before it can consolidate a foothold in the continent. Success may lie in how predator and prey interact naturally.

V. mandarinia is the largest hornet in the world. A female worker may grow to a length of nearly four centimeters (an inch and a half), and the insect has large biting mouthparts that enable it to decapitate its victims. Hornets are usually solitary hunters. But between late summer and fall, V. mandarinia workers may band together to conduct mass attacks on nests of other social insects, notably honeybees. This behavior even has a name: the slaughter and occupation phase. U.S. beekeepers supply billions of honeybees each year to help pollinate at least 90 agricultural crops. And they are worried that this new raider could further worsen already deep losses in important pollinator populations.

The hornet is native to Asia, ranging from Japan and Russia down to Thailand and Myanmar (formerly Burma). The first confirmed U.S. sighting was a dead specimen found in Washington last December. But several of the insects had previously been seen on Vancouver Island in British Columbia in the late summer and fall of 2019. No one yet knows whether the hornet is establishing a North American beachhead in the Pacific Northwest or if it will spread from there. If it does advance, that could mean trouble.

Beekeepers and government agents hope to eradicate V. mandarinia before it becomes entrenched because no human wants to deal with this hornet either. Milligram for milligram, its venom may be less toxic than a honeybee’s, but the hornet is so much larger that it packs a bigger dose—and it can sting again and again. People stung by the hornet have described the experience as like being stabbed with a hot metal pin. The stinger is long enough to pierce the standard protective gear beekeepers wear. A recent article in the New York Times claims that up to 50 people in Japan die from V. mandarinia stings each year. Finding and destroying nests, which are mostly made underground, is the key.

Even assuming experts find a way to protect honeybees and beekeepers, if V. mandarinia is not eradicated, then wild honey bees and other social insects—such as bumblebees, which have no defenses—will be on their own against a fierce new predator. As Sue Cobey, a researcher and bee breeder in Washington State, says, “It will be ugly.”

Honey Bee Pheromones

from Phil Ainslie, President WCABA

Honey bees (*Apis mellifera*) have one of the most complex pheromonal communication systems found in nature, possessing 15 known glands that produce an array of compounds.[1][2] These chemical messengers secreted by a queen, drone, worker bee or laying worker bee, to elicit a response in other bees. The chemical messages are received by the bee's antenna and other body parts. They are produced as a volatile or non-volatile liquid and transmitted by direct contact as a liquid or vapor.

Honey bee pheromones can be grouped into releaser pheromones which temporarily affect the recipient's behavior, and primer pheromones which have a long-term effect on the physiology of the recipient. Releaser pheromones trigger an almost immediate behavioral response from the receiving bee. Under certain conditions a pheromone can act as both a releaser and primer pheromone.

The pheromones may either be single chemicals or a complex mixture of numerous chemicals in different percentages.

Types of honey bee pheromones

Alarm pheromone

Two main alarm pheromones have been identified in honey bee workers. One is released by the Koschevnikov gland, near the sting shaft, and consists of more than 40 chemical compounds, including isopentyl acetate (IPA), butyl acetate, 1-hexanol, n-butanol, 1-octanol, hexyl acetate, octyl acetate, n-pentyl acetate and 2-nonanol. These chemical compounds have low molecular weights, are highly volatile, and appear to be the least specific of all pheromones. Alarm pheromones are released when a bee stings another animal, and attract other bees to the location and causes the other bees to behave defensively, i.e. sting or charge. The alarm pheromone emitted when a bee stings another animal smells like bananas. Smoke can mask the bees' alarm pheromone.

The other alarm pheromone is released by the mandibular glands and consists of 2-heptanone, which is also a highly volatile substance. This compound has a repellent effect and it was proposed that it is used to deter potential enemies and robber bees. The amounts of 2-heptanone increase with the age of bees and becomes higher in the case of foragers. It was therefore suggested that 2-heptanone is used by foragers to scent-mark recently visited and depleted foraging locations, which indeed are avoided by foraging bees. However, this has recently been proven false. In a new discovery, it was determined that bees actually use 2-heptanone as an anesthetic and to paralyze intruders. After the intruders are paralyzed, the bees remove them from the hive.

Brood recognition pheromone

Another pheromone is responsible for preventing worker bees from bearing offspring in a colony that still has developing young. Both larvae and pupae emit a "brood recognition" pheromone. This inhibits ovarian development in worker bees and helps nurse bees distinguish worker larvae from drone larvae and pupae. This pheromone is a ten-component blend of fatty-acid esters, which also modulates adult caste ratios and foraging ontogeny dependent on its concentration. The components of brood pheromone have been shown to vary with the age of the developing bee. An artificial brood pheromone was invented by Yves Le Conte, Leam Sreng, Jérome Trouiller, and Serge Henri Poitou and patented in 1996.

Drone pheromone

Drones produce a pheromone that attracts other flying drones to promote drone aggregations at sites suitable for mating with virgin queens.

Dufour's gland pheromone

The Dufour's gland (named after the French naturalist Léon Jean Marie Dufour) opens into the dorsal vaginal wall. Dufour's gland and its secretion have been somewhat of a mystery. The gland secretes its alkaline products into the vaginal cavity, and it has been assumed to be deposited on the eggs as they are laid. Indeed, Dufour's secretions allow worker bees to distinguish between eggs laid by the queen, which are attractive, and those laid by workers. The complex of as many as 24 chemicals differs between workers in "queenright" colonies and workers of queenless colonies. In the latter, the workers' Dufour secretions are similar to those of a healthy queen. The secretions of workers in queenright colonies are long-chain alkanes with odd numbers of carbon atoms, but those of egg-laying queens and egg-laying workers of queenless colonies also include long chain esters.

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Egg marking pheromone

This pheromone, similar to that described above, helps nurse bees distinguish between eggs laid by the queen bee and eggs laid by a laying worker.

Footprint pheromone

This pheromone is left by bees when they walk and is useful in enhancing Nasonov pheromones in searching for nectar.

In the queen, it is an oily secretion of the queen's tarsal glands that is deposited on the comb as she walks across it. This inhibits queen cell construction (thereby inhibiting swarming), and its production diminishes as the queen ages.

Forager pheromone

Ethyl oleate is released by older forager bees to slow the maturing of nurse bees.[9] This primer pheromone acts as a distributed regulator to keep the ratio of nurse bees to forager bees in the balance that is most beneficial to the hive.

Nasonov pheromone

Nasonov pheromone is emitted by the worker bees and used for orientation and recruitment. Nasonov pheromone includes a number of different terpenoids including geraniol, nerolic acid, citral and geranic acid.

Other pheromones

Other pheromones produced by most honey bees include rectal gland pheromone, tarsal pheromone, wax gland and comb pheromone, and tergite gland pheromone.

Types of queen honey bee pheromones

Queen mandibular pheromone

Queen mandibular pheromone (QMP), emitted by the queen, is one of the most important sets of pheromones in the bee hive. It affects social behavior, maintenance of the hive, swarming, mating behavior, and inhibition of ovary development in worker bees.[10] The effects can be short and/or long term. Some of the chemicals found in QMP are carboxylic acids and aromatic compounds. The following compounds have been shown to be important in retinue attraction of workers to their queen and other effects.[11]

- (E)-9-Oxodec-2-enoic acid (9-ODA) – inhibits queen rearing as well as ovarian development in worker bees; strong sexual attractant for drones when on a nuptial flight; critical to worker recognition of the presence of a queen in the hive
- (R,E)-(–)-9-Hydroxy-2-enoic acid (9-HDA) promotes stability of a swarm, or a "calming" influence
- (S,E)-(+)-9-HDA
- Methylparaben (HOB)
- 4-Hydroxy-3-methoxy phenylethanol (HVA)

Work on synthetic pheromones was done by Keith N. Slessor, Lori-ann Kaminski, Gaylord G. S. King, John H. Borden, and Mark L. Winston; their work was patented in 1991. Synthetic queen mandibular pheromone (QMP) is a mixture of five components: 9-ODA, (–)-9-HDA, (+)-9-HDA, HOB and HVA in a ratio of 118:50:22:10:1.

Queen retinue pheromone

The following compounds have also been identified, of which only coniferyl alcohol is found in the mandibular glands. The combination of the 5 QMP compounds and the 4 compounds below is called the queen retinue pheromone (QRP). These nine compounds are important for the retinue attraction of worker bees around their queen.

- Methyl oleate
- Coniferyl alcohol
- Cetyl alcohol
- -Linolenic acid

Other

The queen also contains an abundance of various methyl and ethyl fatty acid esters, very similar to the brood recognition pheromone described above. They are likely to have pheromonal functions like those found for the brood recognition pheromone.

Scholarship Group Makes Progress in the Heritage Garden Bee Yard

The Williamson County Area Beekeepers Association Scholarship Program is going strong this May after Recipient selection in February, hive construction in March, and nuc installation in April.

The four new recipients, Emily Griffis from Granger, Adyon Guevara from Cameron, Garrett Rogers from Temple and Sterling Kinghorn from Round Rock have performed their third inspection of their hives and are learning more and becoming more adept with handling the bees with each visit. A second 8-frame box was added as the bees continue to expand the brood nest and draw out more comb with stimulative feeding.

Scholarship Hives on April 21st…

This year's (2020) group join other recipients from last year in the 2-year curriculum, "A Sustainable Apiary for Central Texas," that offers a more in-depth concept of keeping bees and apiary management. In this the emphasis is on maximizing forager bee population in springtime, expanding the beehive in spring to absorb seasonal losses, requeening the beehive every year, and proactive Varroa mite monitoring and treatment throughout the year. By putting these basis guidelines in place these youngsters will hopefully be able to keep bees in our area successfully for years to come.

Scholarship Hives on May 21st. Wow!

The scholarship recipients received their nuc hives on April 18th and installed them at the Bost Farm before the hives were moved to the Heritage Community Garden in SE Georgetown. The four recipient's hives are in one location because this offers opportunity for group instruction.

Randy Oakley has volunteered again this year to provide training for these youngsters. Checking the hives at the garden every two weeks, they receive basic instruction in proper inspection to gauge growth and development of the hive and learn the techniques for growing and sustaining their apiary. It is enjoyable to see the new recipients pick up the concepts and assist each other in working their hives, comparing the differences and noting the changes. They are all required to keep a notebook of routine inspections and handouts from training sessions. The parents have also been very supportive of the new program, attending the sessions, serving as scribes, and even pitching in or standing in when necessary.

Sterling, Garrett, Aydon, and Emily checking hives under supervision of mentor, Randy Oakley

Starting with a five frame nuc on April 18th, all the hives have grown to triple 8-frame deeps in less than two months and have doubled the brood nest size too. In addition, the bees are drawing out the foundation in all the boxes. The hives are all fitted with two "cap and ladder" in board frame feeders and the bees are consuming almost 2 gallons of 1.5 to 1 sugar syrup a week. No wonder the bees are drawing out so much wax foundation.

The recipients from last year are completing the program and have taken the nuc created from the plan home with anticipation of moving the original parent colony to their own apiary after the completion of the honey flow the first part of June. They should be able to extract honey from the established production colony at the garden before moving.

The plan for the new recipients in the first year of the program is to draw all the foundations in three deeps and support a “piggy back” nuc (w/second queen), overwinter it, and look to the second year for any substantial honey production.

Last year's recipients fully involved in checking their production hives at the Heritage Garden

Congratulate these new beekeepers on this fine start and encourage them in this learning experience. Jimmie Oakley – Scholarship Chair

In the Bee Yard…

Emily Griffis caps her colorful hive with a lid to complete her required inspection.

2020 Scholarship Recipients Garrett Rogers, Sterling Kinghorn, Aydon Guevara and Emily Griffis...inspection complete, job well done!

A Helping Hand…Thanks Parents!

Shannon Brett does some of the heavy lifting to help out his son Reece Brett (2019)

Misty Griffis gives good instructions on precise pouring technique to her daughter Emily Griffis (2020)

Aaron Bramwell provides a second opinion on frame reading to his son Quinn Bramwell (2019)

Julie Kinghorn confirms what her son Sterling Kinghorn (2020) sees as she records information for his inspection notebook.

Bee & Queen Procurement a BIG Deal at WCABA

Jimmie Oakley – Program Order Coordinator

There has been inquiry into the status of the most recent WCABA Bee Procurement Program results in comparison to previous years. Are the nucs and queens as viable, are they as available, and are the members satisfied; all good questions. As Program Coordinator I will say I have not had many complainants. But in response for the new members and some of the older ones here is a short history and a few of the numbers.

The records I have kept indicate the club has offered some kind of program to the members for securing bees and queens for about the last 20 years or so. For most of that time we have settled for the simplest and easiest format of receiving bees (in packages) and queens (in cages). It has worked well over time and therefore not a great need to change. In 2001 queen bees only cost $8.00 and we could get a package for under $40.00; but times have changed.

With the increase in pricing to keep up with increase in the cost of doing business (inflation) the club has changed when real value could be gained. For many years Walker Apiaries in Rogers, Texas was our "go to" guy for getting local quality bees and queens at a fair price. WCABA's usual average ordered was 100 queens and 55 packages, which met the needs of our small club. When Walker Apiaries' business model changed and they quit offering bees or queens for sale, we had to change too.

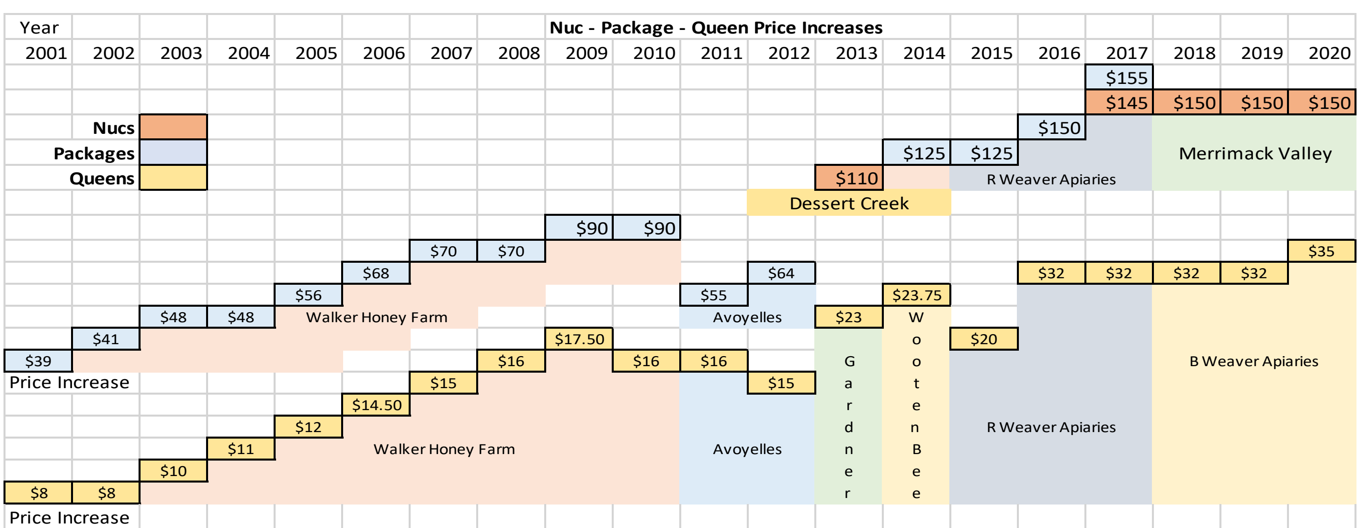
In 2011 Garry Bible helped us get hooked up with Avoyelles Honey Company and the Bordelon family in western Louisiana where we obtained both packages and queens for several years. As the club grew in members so did the size of orders placed, getting up to a hundred plus queens and over 200 packages.

The club changed directions again in 2013 trying 5-frame nucs for the first time in our procurement program. The great advantage to starting with a nuc is that the queen is already established, and brood, pollen, and honey are included. This gives the beekeeper a real jump on buildup before the honey flow starts. Unfortunately, the experience with what we got for the increased cost was disappointing which caused us to revert back to packages.

With the continued growth of the club the size of the bee order has grown. At the beginning of the decade the value of both bees (107) and queens (55) was just over $10,000.00, but it soon jumped to $24,000.00 and $36,000.00 respectively as more members wanted more bees. The last three years the order for bees (270 nucs) and queens (100+) has had an average value of $45,000.00.

Much credit goes to the WCABA Executive Board for aggressively pursuing the market early (December) to assure the club gets the early delivery pickup date (April), and prompt remittance for the invoiced amount to assure we have access to additional stock if needed. The many volunteers that support the program are also essential in pulling off the 24 hour turn around that occurs when the supplier (currently Merrimack Valley Apiaries) signals that they have our product ready. So, here is the question again, are the nucs and queens viable, are they available, and are you as a member satisfied?

We make changes in the program when it needs to be, so here is your chance to provide real feedback, both negative and positive, to help us direct the program to satisfy your needs. Responses are appreciated. J.O.



Donations Made by WCABA

from Shannon Montez, Vice President WCABA

WCABA recently donated $500 to Randy Oakley. Randy has been mentoring the scholarship recipients for the last two years. He drives from Temple every two weeks to educate the scholarship recipients and the information that he has taught them is invaluable. We donated the money to thank him for his time and effort.

In January, we also donated $100 to the 4-H essay contest. The winner of the essay contest was Lilly Walker. Lilly will go on to compete at the state level. As a way of saying thank you, Lilly wrote a nice letter to our club acknowledging the donation.

As part of our continued outreach to the community, we donated 5 Queens to the BiG Honey Company in Georgetown. BiG has been keeping bees for the last 3 years and several of our members assist BiG by maintaining hives for BiG.

Lastly, we want to thank Austin Area Beekeepers Association for donating $1000 to our Honey Queen/Princess program. They have donated to our program for the last several years and we are grateful for the local support.

Volunteers and Needs

WCABA beekeepers wanting to be on the **swarm capture** and or **extraction list** need to contact Phil Ainslie. Go to wcaba.org and clic on "contact us". Provide you name, phone number and the county or counties you will service. Your name will go on the group e-mail and messages will be sent to the group as the requests arrive.

WCABA is in need or **mentors**: If you would like to be a mentor go to wcaba.org and click on "contact us". Provide your name, email, and phone number. Your name will go on a group email for mentors. Messages will be sent to the group as requests arrive.

Emergence of deadly honey bee disease revealed

May 1, 2020
Newcastle University
Honey bee colonies from across the UK are increasingly suffering from a viral disease, a new study has shown. The team found that the number of honey bee colonies affected with chronic bee paralysis rose exponentially between 2007 and 2017. Chronic bee paralysis symptoms include abnormal trembling, an inability to fly, and the development of shiny, hairless abdomens. The disease is caused by a virus known as chronic bee paralysis virus (CBPV), and infected bees die within a week. This leads to piles of dead bees just outside honey bee hives and whole colonies are frequently lost to the disease.

Natural fires help native bees, improve food security

May 1, 2020
University of California - Riverside

Most flowering plant farms employ honey bees, a non-native species originally imported from Europe and managed by beekeepers. However, research shows that farms surrounded by natural bee habitat have higher crop yields.
UC Riverside entomologist Lauren Ponisio explains that native bees are increasingly important to food growers. They pollinate crops on the fringes of a farm and could potentially also be used for agricultural purposes.
Native bees that boost food crops are in decline but changing fire management policies could help them. A new study finds these native bees are better able to survive harsh climate events, like drought, in areas where naturally occurring fires are allowed to burn.

New members:

Jeff Cox	Georgetown
David Bowcom	Leander
James Johnson	Burnet

Renewing members:

Pamela Crider
Dewey & Mary Helmcamp

Texas Beekeepers Association

Annual Convention
5th - 7th November in Allen

MEMBERSHIP APPLICATION

WILLIAMSON COUNTY AREA BEEKEEPERS ASSOCIATION

Dues: **$20.00** per year - individual or **$25.00** - family membership

New Member / Renewing Member

(circle one) Date:____________________

Name:____Amount: $ ____________

Cash or Check #_________

Address:____

City/State/Zip:____

Phone: (   )____________________ e-mail:______________________________________

(please print)

To save postage cost may we send your Newsletter via e-mail? Yes[   ] No[   ]

Instructions: print , fill out, and bring to club meeting , or mail with check to Membership

Mrs. Shirley Doggett - 400 C. R. 440 - Thrall, TX 76578 - Ph.512/924-5051

Visit our Website at:

www.wcaba.org

or email to:

info@wcaba.org