

Brighton & Lewes Beekeepers



Newsletter

Volume 7 – July 2019

Editor: Norman Dickinson

BRIGHTON AND LEWES DIVISION OF THE SUSSEX BEEKEEPERS ASSOCIATION

www.brightonlewesbeekeepers.co.uk

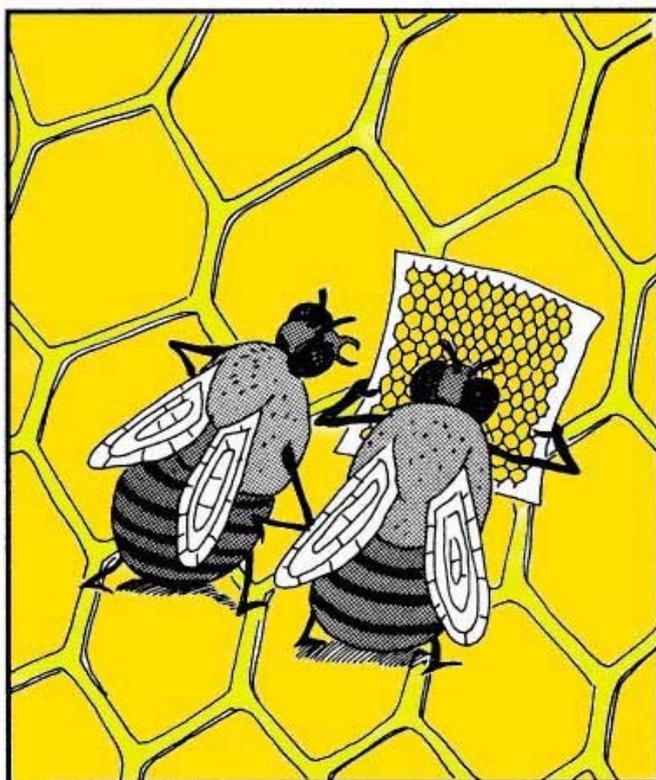
Linklater Event in Lewes – 19th May 2019

Brighton & Lewes were again invited to the Linklater Event on the Railway Land in Lewes, only this time the event ran from 2pm to 5pm as opposed to all day. The

weather was fine and public interest was as previous very good.

Local honey and products of the hive were on sale and proved very popular.

Thanks must go to Hilary Osman, Mary King and Ian White for manning the stand together with yours truly, and hopefully we will be there again next year.



So, Where are we exactly?

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Forthcoming winter meetings:

- No further winter meeting until October 2019

Forthcoming summer out-apiary meetings:

- See rear panel

In next months edition:

- Amanda Advises
- Asian Hornet Action Team
- Report on the Honey event at South of England Show
- Contributions from our members

Asian Hornet Action Team Report by Manek Dubash

Welcome to summer, and here's hoping it's a hornet-free season.

However, there's a good chance that it won't be. It's from now until the end of autumn that we need to be stepping up our vigilance, as any Asian hornet (*Vespa velutina*) primary nests will now be spawning secondary nests, from which will emerge lots of workers, eager to predate on our bees.

What this means is that we should have those traps up – the ones that monitor not kill – one per apiary. We could consider what if any measures we might take to mitigate the impact of *V. velutina*, such as installing a mesh in front of the

hive entrances. I'd be interested to hear from anyone who tries this.

So far we've heard of no sightings on here on the UK mainland, although sightings in the Channel Islands have increased.

So need to maintain our vigilance. The public need to be our eyes and ears – although sensationalist reporting I've seen in recent weeks will have raised awareness, although headlines about killer hornets are highly overblown. Experience shows that *V. velutina* is not an aggressive insect, except when its nest appears under threat.

To bring some facts to the table, I

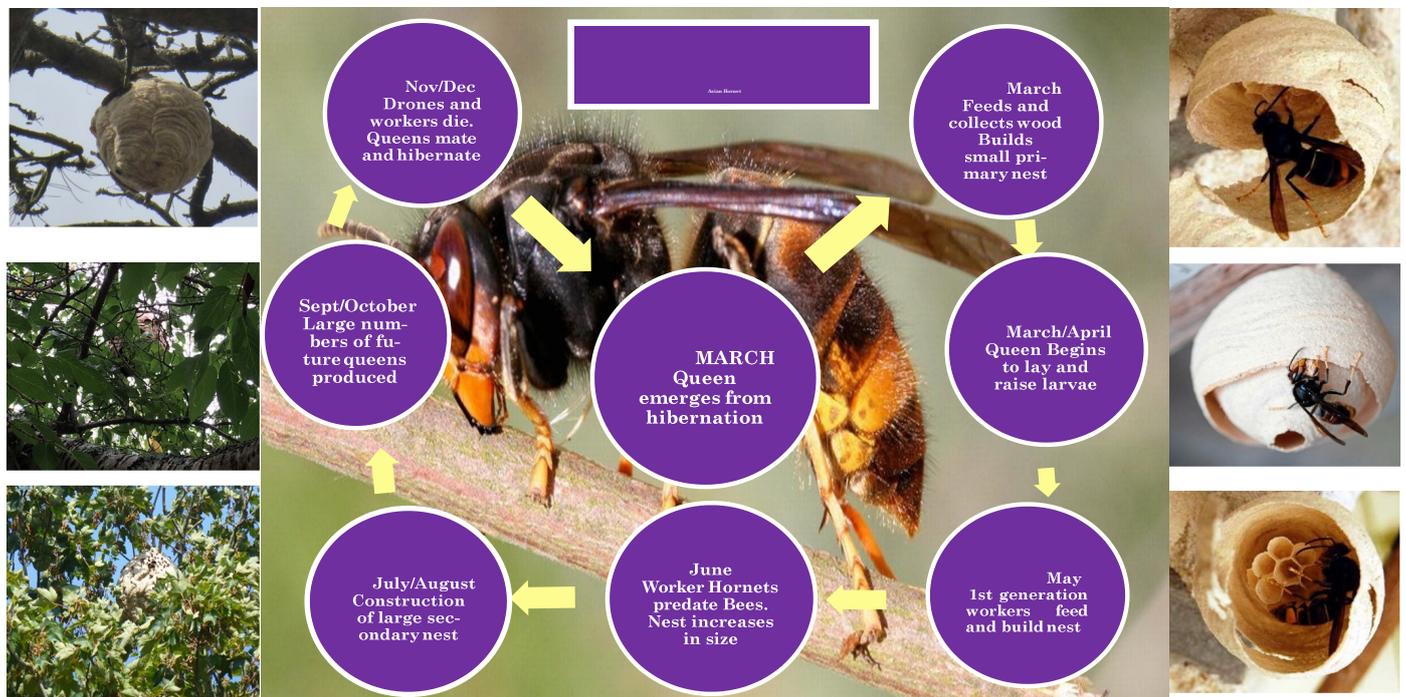
plan to source materials to help people identify the insect, so we can hand them out to friends and family, and I'll bring them along to the apiary meetings.

If you need more information or you identify a hornet, or if you want to join the Asian Hornet Action Team (AHAT), please contact me.

Keep your eyes open!

And if you need more information or you identify a hornet, or if you want to join the AHAT, please contact me. Manek's contact details can be found on the back cover.

ASIAN HORNET LIFE CYCLE



Images courtesy of The Animal and Plant Health Agency (APHA), Crown Copyright

Amanda advises...

At last it looks as though the weather is improving, not a minute too soon. The first blackberries were in flower on 30th May, however, I have noticed no significant nectar coming in so far, on the rainy days they were probably eating it all. On one occasion I went round the garden early in the morning after a rainy day and night and found my Lamb's Ears had several really soggy bumblebees which had obviously been there all night. They were moving and had access to good quality nectar and the sun was shining so I was not worried about them. Bumblebees sometimes spend the night away from the nest, honey bees are less willing and being smaller probably would not survive so well. One problem with this protracted unsettled period is that my virgin queens have been reluctant to go out and mate. Some have taken three weeks to mate. I have had several virgin losses in recent Apidea and artificial swarms; requiring rapid merging back to the parent, nucs have been without queens for two brood cycles and I had to give them another frame of brood to keep them going, so their populations have reduced and the

bees have aged. I have used up most of my successfully mated earlier Apidea to rescue larger colonies. I have lost one Apidea and one split to drone laying workers at the out apiary where I lost track of how long they had been broodless. Apidea are always more vulnerable to becoming drone layers, which can happen as soon as a week of broodlessness and queenlessness, as they don't have brood to start with. The other problem often experienced in poor summers when large colonies are confined indoors is the rapid spread of viruses such as Chronic Bee Paralysis Virus. By the time you read this I will have been forced to cull two of my largest and decided on a third. I had hoped they might linger on to bring in a bit of honey but the populations dwindled and one lost their queen so they were doomed. Two years ago a large one stopped showing signs of CBPV as soon as the weather improved, hence the delay in deciding whether to cull the last one. If you are lucky enough to have colonies large enough to collect serious honey and if we get a spell of settled warm weather then add empty supers as required,

remembering that they need three times as much space to process the nectar as the final honey will require.



From the middle of July, rather than adding more boxes, try to consolidate the honey by moving full frames to the edges of the boxes to encourage them to be filled rather than putting a little in new frames and not being able to finish them when the flow stops at the end of the month. Around me the Ragwort flowers from end July and into August so I try to take the honey off before it has a chance to contaminate the honey; turning it and the wax a lurid yellow and tasting unpleasant.

Research:

We know bees can recognise zero, it has now been found they can link symbols to numbers so they can recognise that 'two' can represent two bananas or two trees etc. Apparently this is a complicated idea only grasped by humans, primates and birds, but the first time in insects.



Dry bee on Lamb's Ears



Soggy bee out all night in the rain

Tree Bumblebee on Cotoneaster franchetii, popular with bees



Chronic Bee Paralysis virus



Flowers can hear buzzing bees—and it makes their nectar sweeter

By Michelle Z. Donahue. Article sent in by Amanda Millar published in the National Geographic Jan 15 2019

Even on the quietest days, the world is full of sounds: birds chirping, wind rustling through trees, and insects humming about their business. The ears of both predator and prey are attuned to one another's presence.

Sound is so elemental to life and survival that it prompted Tel Aviv University researcher Lilach Hadany to ask: What if it wasn't just animals that could sense sound—what if plants could, too? The first experiments to test this hypothesis, published recently on the pre-print server bioRxiv, suggest that in at least one case, plants can hear, and it confers a real evolutionary advantage.

Hadany's team looked at evening primroses (*Oenothera drummondii*) and found that within minutes of sensing vibrations from pollinators' wings, the plants temporarily increased the concentration of sugar in their flowers' nectar. In effect, the flowers themselves served as ears, picking up the specific frequencies of bees' wings while tuning out irrelevant sounds like wind.

The sweetest sound

As an evolutionary theoretician, Hadany says her question was prompted by the realization that sounds are a ubiquitous natural resource—one that plants would be wasting if they didn't take advantage of it as animals do. If plants had a way of hearing and responding to sound, she figured, it could help them survive and pass on their genetic legacy.

Since pollination is key to plant reproduction, her team started by investigating flowers. Evening primrose, which grows wild on the beaches and in parks around Tel Aviv, emerged as a good candidate, since it has a long bloom time and produces measurable quantities of nectar.

To test the primroses in the lab, Hadany's team exposed plants to five sound treatments: silence,

recordings of a honeybee from four inches away, and computer-generated sounds in low, intermediate, and high frequencies. Plants given the silent treatment—placed under vibration-blocking glass jars—had no significant increase in nectar sugar concentration. The same went for plants exposed to high-frequency (158 to 160 kilohertz) and intermediate-frequency (34 to 35 kilohertz) sounds.

But for plants exposed to playbacks of bee sounds (0.2 to 0.5 kilohertz) and similarly low-frequency sounds (0.05 to 1 kilohertz), the final analysis revealed an unmistakable response. Within three minutes of exposure to these recordings, sugar concentration in the plants increased from between 12 and 17 percent to 20 percent.

A sweeter treat for pollinators, their theory goes, may draw in more insects, potentially increasing the chances of successful cross-pollination. Indeed, in field observations, researchers found that pollinators were more than nine times more common around plants another pollinator had visited within the previous six minutes.

"We were quite surprised when we found out that it actually worked," Hadany says. "But after repeating it in other situations, in different seasons, and with plants grown both indoors and outdoors, we feel very confident in the result."



The bowl-shaped flowers of evening primrose may be key to their acoustic capabilities.

Photograph by Dennis Frates/Alamy

Flowers for ears

As the team thought about how sound works, via the transmission and interpretation of vibrations, the role of the flowers became even more intriguing. Though blossoms vary widely in shape and size, a good many are concave or bowl-shaped. This makes them perfect for receiving and amplifying sound waves, much like a satellite dish.

To test the vibrational effects of each sound frequency test group, Hadany and her co-author Marine Veits, then a graduate student in Hadany's lab, put the evening primrose flowers under a machine called a laser vibrometer, which measures minute movements. The team then compared the flowers' vibrations with those from each of the sound treatments.

"This specific flower is bowl-shaped, so acoustically speaking, it makes sense that this kind of structure would vibrate and increase the vibration within itself," Veits says.

And indeed it did, at least for the pollinators' frequencies. Hadany says it was exciting to see the vibrations of the flower match up with the wavelengths of the bee recording.

"You immediately see that it works," she says.

(Continued on page 5)

(Continued from page 4)

To confirm that the flower was the responsible structure, the team also ran tests on flowers that had one or more petals removed. Those flowers failed to resonate with either of the low-frequency sounds.

What else plants can hear

Hadany acknowledges that there are many, many questions remaining about this newfound ability of plants to respond to sound. Are some “ears” better for certain frequencies than others? And why does the evening primrose make its nectar so much sweeter when bees are known to be able to detect changes in sugar concentration as small as 1 to 3 percent?

“It’s important for them to be able to sense their environment — especially if they cannot go anywhere.”
Lilach Hadany, Tel Aviv University“

Also, could this ability confer other advantages beyond nectar production and pollination? Hadany posits that perhaps plants alert one another to the sound of herbivores mowing down their neighbours. Or maybe they can

generate sounds that attract the animals involved in dispersing that plant’s seeds.

“We have to take into account that flowers have evolved with pollinators for a very long time,” Hadany says. “They are living entities, and they, too, need to survive in the world. It’s important for them to be able to sense their environment—especially if they cannot go anywhere.”

This single study has cracked open an entirely new field of scientific research, which Hadany calls phytoacoustics.

Veits wants to know more about the underlying mechanisms behind the phenomenon the research team observed. For instance, what molecular or mechanical processes are driving the vibration and nectar response? She also hopes the work will affirm the idea that it doesn’t always take a traditional sense organ to perceive the world. “Some people may think, How can [plants] hear or smell?” Veits says. “I’d like people to understand that hearing is not only for ears.”

Richard Karban, an expert in interactions between plants and their pests at the University of California Davis, has questions of his own, in particular, about the evolutionary advantages of plants’ responses to sound.

“It may be possible that plants are able to chemically sense their neighbours, and to evaluate whether or not other plants



A brown and yellow hoverfly rests on a dewdrop-covered evening primrose in the U.K. Photograph by Michael Grant Wildlife/Alamy

Photograph by Michael Grant Wildlife/Alamy

around them are fertilized,” he says. “There’s no evidence that things like that are going on, but [this study] has done the first step.”

National Geographic Editor’s Note: This story has been updated to correct the percent increase in nectar’s sugar concentration.

McDonald’s Mini-Restaurant for Bees Is Now Open for ‘Bees-ness!’ by [Melissa Castellanos](#) and published in [upliftpost](#)

McDonald’s restaurants in Sweden are creating a lot of buzz as they are trying to combat the surmounting number of bee colony deaths, an ongoing problem around the world. A number of McDonald’s in the beloved Scandinavian country are hosting beehives on their roofs and others are planting flowers outside to attract bees – and it’s working!

McDonald’s has been so impressed with their efforts that they reportedly commissioned a professional carpenter to make the ‘smallest ever McDonald’s,’

also known as a “McHive.” The coolest part is that it’s a fully-functioning beehive that has all the bells and whistles of a real McDonald’s!

The impeccable “McHive” features a McDonald’s sign, drive-through, an outside seating area and tiny ads on the windows to boot! McDonald’s is hoping that this extraordinary Swedish initiative could help bees overall if it has a worldly domino effect. The demise of bee colonies (caused by an “overuse of pesticides, diesel fumes, intensive farming practices and parasites from

introduced species”) could also mean a major breakdown in our food supply.

“We have a lot of really devoted franchisees who contribute to our sustainability work, and it feels good that we can use our size to amplify such a great idea as beehives on the rooftops,” Christoffer Rönblad, marketing director of McDonald’s Sweden told Adweek.

Editor’s Note: The advertising nature of this article does not necessarily reflect on the opinion of the B&L Division.

South of England Show Honey & Bees Results and Photos

Class	Name	Position
3 - Two jars of medium honey	Bob Curtis	1st
5 - Two jars of granulated honey	Bob Curtis	2nd
9 - One frame of honey	Bob Curtis	2nd
10 - A honey bee related photograph	Bob Curtis	1st
10 - A honey bee related photograph	Sue Taylor	4th
11 - One cake of beeswax	Sue Taylor	3rd
12 - A novice jar of honey	Sue Taylor	3rd
15 - Honey fruit cake	Hilary Osman	1st
15 - Honey fruit cake	Sue Taylor	4th
22 - Three pieces of beeswax	Sue Taylor	2nd
23 - Three pieces of beeswax	Sue Taylor	3rd

Congratulations go to Bob Curtis, Hilary Osman and Sue Taylor as detailed above.



Thanks go to Bob Curtis for providing the photographs

Photo Corner



A couple of photos from Tony Robinson. The hive in the sunset is superb!



McDonald's Mini-Restaurant for Bees as featured on Page 5



Linklater Event in Lewes

B&L Divisional Diary 2018 / 2019

Outdoor meetings:

Meetings are held on Saturdays or Sundays as noted below, between April and September. Unless otherwise stated all meetings will start at 2:0pm and are subject to weather permitting. Location maps are on the website in the member's section.

Summer programme:

~~Sat 1st June: Hove — What do I see in my hive?~~

~~Sun 23rd June: Grassroots — Supering~~

Sat 6th July: Hove - TBA

Sun 21st July: Grassroots - Harvesting Honey

Sun 1st Sept: Grassroots - Winter Preparations

Sun 8th Sept: Newick - B&L annual BBQ

Dates for your diary:

~~6th to 8th June: South of England Show, Ardingly.~~

3rd August: Rottingdean Fair

15th September: Westdean Fair

24th to 26th October: National Honey Show, Sandown Park Racecourse, Esher, Surrey.

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National Honey Show Representative:
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The Brighton and Lewes Division of the SBKA cannot accept any responsibility for loss, injury or damage sustained by persons in consequence of their participation in activities arranged.

Contributions to your newsletter

Contributions for the newsletter, including photos can be sent, preferably by email, to the editor. Please refer to panel above for details. Please limit to a maximum of 900 words. Copy to be sent no later than the 12th of the month preceding the month of publication. Photos etc. for the website should be emailed to our Gerald Legg

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QR Link to B&L Website

