# Brighton & Lewes Beekeepers

## Newsletter

Volume 2 – February 2020

Editor: Norman Dickinson

#### BRIGHTON AND LEWES DIVISION OF THE SUSSEX BEEKEEPERS ASSOCIATION

#### www.brightonlewesbeekeepers.co.uk

### Editorial

The Brighton & Lewes **Beekeepers AGM takes** place on Wednesday, 19th February 2020 at 7.30pm. In previous years it was always held in January however to accommodate members who normally are away mid-January it was decided to move it to February. One of the Agenda Items will be the approval of the B&L **Constitution which your** Committee have totally revised. Pat also sent a copy of the new **Constitution with last** months Newsletter. As in previous years, we will also be holding our **B&L Honey Show and** invite all members to participate. The Honey Show Schedule & Rules and Entry Form was sent out by Pat Clowser in January. We would request that you read the Schedule & Rules very carefully to ensure that vour entries conform as laid down, any that don't will unfortunately be disqualified.

Whilst the Honey Show judging takes place and following the AGM we will be holding a mini-auction of unwanted beekeeping relating items. A copy of the Auction Entry Form will be sent out by Pat to all Members. Please note that a maximum of 5 Lot Items will be accepted and please, no rubbish!

The Sussex Beekeepers Association AGM will take place on 7th March 2020 commencing 1.30pm. This

year it is being held at the Luxford Centre, Library Way, Uckfield, TN22 1AR. There will be two speakers, Celia Davies talking on The honey bee inside out and Christine Stevens on Selling honey and beyond the doorstep. Both of these speakers have always presented very interesting and informative talks and I do not expect this to differ on this occasion.



## January Winter Meeting Report by Bob Curtis

Following a reminder from committee member Bob Curtis of the upcoming honey show at the AGM, and of the Disease Day in Ringmer from Chairman Heather McNiven, the first and well-attended meeting of 2020 was treated to an excellent and informative talk on winter work, spring preparation and wax changing. Christine Stevens of Chichester Beekeepers was the speaker and she presented a comprehensive set of plans and methods of things to do from now up to and including the first spring inspection. Apart from hefting to check for the volume of stores in each hive, she pointed out that examining the entrance allows you to compare activity across all hives, and check whether mice have taken up residence inside. Pollen being gathered suggests that the queen is laying.

Christine said that feeding candy – or fondant – was important to avoid starvation, especially from now

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## Forthcoming winter meetings:

• See rear panel

## In next months edition:

- Amanda Advises
- Asian Hornet Action Team
- Contributions from our members

#### Amanda advises...

Firstly, I hope none of your bees suffered or drowned in Storm Brendan and the heavy rain a few days later. Last month I mentioned threats to all pollinators being climate change, pesticides and habitat loss; I should have included other threats being the way we manage our honey bees and pests and disease; I address that now.

While the weather was very mild for several weeks; I had only rare opportunities for checking on colonies because it was so wet and windy. Now we are in a bright, dry spell but I am probably even less able to check them than before because it is so cold with it and I wish I had made more use of the 12 deg C days. I did manage to investigate the colony with drones, which I mentioned in my last article. I am sure even beginners will know that drones in the middle of winter spells bad news. Deformed wing virus (DWV) may indicate high varroa, although in this case was a legacy rather than actual varroa as they were mostly removed by the **Oxalic Acid vapourisation in** November, but DWV can kill a colony without varroa being an issue. Fortunately, I only saw two DWV drones. Drones can either mean queen loss and subsequent drone laying workers, or a poorly mated queen laying unfertilized eggs. Last year this colony had been trying to supersede from before I was given it in early July until late August when I saw some eggs at last. My mistake was not checking a few weeks later that it was in fact normal worker brood as I could have merged it then. but maybe she reverted to drone laving later as there were a good number of worker bees present and only a few adult drone even though the brood was now all drone. It was clear from the brood pattern that it was a drone laying queen and I quickly found and removed her and merged the colony on top of a strong nuc next to them on 27th December.

If you follow the blog called The Apiarist by David Evans (who is writing this year's BBKA News, Readers Questions Answered) you will have seen the blog in January was about queen mating, polyandry and colony fitness (basically the more drones she mates with the better) and he reminds us that queens mating in as early as July to early August may suffer from reducing drone availability and those drones which are around are ageing and may not be up to the job, so that was probably what happened here.

I have hefted all mine and found them heavy and had the inserts in for a week around the new year and now have a good idea of size and mite drop (mostly zero) and have estimated the percentage reduction in size since my last full inspection end of August. I was delighted to see some of my nucs were the about same size. One colony felt lightish, had the greatest size reduction and I noticed a single drop of dysentery on the insert; all symptoms of concern. I inspected, knowing things were probably bad and sure enough I found drone laying workers, although they had plenty of stores. So culled them, and will sterilise everything. They had had the worst Chronic Paralysis Virus in the summer and may not have got over it completely. One discrepancy became apparent after assessing the colony size from the seams of debris on the insert. This drone laying colony indicated 4 seams from the debris, had 4 highly agitated seams when opened. Another colony appeared to have suffered quite a size reduction, although otherwise symptom-free, had debris indicating 5 seams; on opening there were 7 calm seams and healthy brood. I realise the outer insulating layer of bees are not working the seams and so produce no debris, so maybe healthy clusters are larger than they seem (seam - sorry, pun!).

If you suspect a colony has a problem; please check it and cull before it has a chance to die or drift to other colonies or others rob it when the weather warms up and sterilize the equipment and sterilize or burn the frames before other bees have an opportunity to access it. I saw some research recently and they found that 63% of the flowers visited by honey bees have honey bee parasites on them and 78% of wild bees which visit these flowers have honey bee parasites and diseases. Cull sick colonies before this can happen, especially if you are someone who does not treat.



Otherwise you are doing no-one any favours. Try to analyse what killed them so you can learn for next time. I have lost two so far and am satisfied I understand why. I am happy to look at photos of comb if you like. I saw someone's colony recently, which had appeared to die of isolation starvation - but it had been very large last year; very small when it died; had two supers of stores; there were dysentery spots on the frames, brood cells were empty and dead bees all over the floor. (Four floors I have checked so far in my apiary have been spotless; no dead bees.) My interpretation is that they had a disease; probably a virus; killing bees; the rest too weak or depressed to clean them out. The cluster reduces to a size below the threshold for survival and is unable to move to the stores and the survivors eventually die of starvation. I am aware of a number of new beekeepers' colonies, which have died of **Parasitic Mite Syndrome because** the mite load was allowed to get too high. New Year's resolution anyone? Monitor, monitor and treat if when necessary.

In the last few days I have had a huge boil up of frames, which I have spent the last few weeks scraping clean - I got a bit behind at the tail end of last year. Still more to do though, plus the culled colony and I should be able to remove a further 5 boxes of dark comb for recycling at the first inspection as my bees move up into their stores (the advantage of running on one frame size!). I have been through my records and know which colonies I shall rear queens from. It is time to get supers ready, with wax foundation put in at the end of February as mid March normally sees some of mine requiring a super.

This article has been mainly about

#### (Continued from page 2)

disease - I am sorry - but things are looking up; my snowdrops and crocus are out in the sun. Most of my bees seem to be more interested in collecting water still but on 19th Jan I saw two colonies taking in pollen. It is going to be a bit cold for the next few weeks, just as their brood rearing increases, so I have put some extra insulation on the nucs this week to help them. One thing I must do before March is to make up new solitary bee tubes from canes. The old canes sealed with cocoons inside I shall transfer to a nuc box to hatch out, which I shall put near the new cane

containers in early March. This is because they accumulate parasites (parasitic flies and beetles can kill most of them; parasitic bees I can live with) and it is best to give them new canes every year, and as soon as they are sealed with young solitary bee brood then put them in fine mesh or stockings to prevent the parasitic insects getting to them and keep them in a cool place until March when the mesh is removed and they are allowed to hatch out.



In Amanda's own words, "a satisfying mountain of clean frames"

#### Bees' Too much sugar in nectar 'slows down bees' by Tania Snuggs, Sky News

The more sugar nectar has, the thicker it becomes - and that creates problems for bees. Too much sugar in nectar slows down bees, a Dr Jonathan Patrick said: "For low study has found.

Bumblebees offload the nectar they the more sugar nectar contains, the thicker and stickier it becomes meaning it takes more time and energy for the bees to regurgitate it. A report, published in the Journal of the Royal Society Interface, looked at both stages - drinking and hard to drink a thick, sticky liquid, vomiting - in one of the most common bumblebees in the UK, the Bombus terrestris (or the bufftailed bumblebee).

As part of the study, they were allowed to forage on three different concentrations of sugar solutions -

with researchers timing how long it between choosing a nectar that is took the bees to vomit up the nectar energy-rich, but isn't too timethey had collected.

strength nectar, bees had a quick vomit that only lasted a few secdrink from flowers by vomiting, but onds, then were back out and forag- sions." ing again.

> "But for really thick nectar they took ages, sometimes straining for nearly a minute."

> Usually, bees regurgitate the drink faster than they consume it. "It's but imagine trying to spit it out again through a straw - that would be even harder.

"At a certain sugar concentration, the energy gain - versus energy loss - is optimised for nectar feeders. "Bumblebees must strike a balance

consuming to drink and offload.

"Nectar sugar concentration affects the speed of the bees' foraging trips, so it influences their foraging deci-

The scientists hope their study can help other researchers make better predictions as to which types of nectar bumblebees and other pollinators would prefer - and therefore the kinds of flowers they are more likely to visit.

That, in turn, could help crop breeders produce the most appealing plants, and therefore lead to higher yields.

Article submitted by Tony Robinson

#### (Continued from page 1)

through until March/April. As for varroa, Christine said that a brood new one. Check the queen has break was highly effective - an issue she returned to later.

Other items to do now are to look through last year's records and plan for the coming year. Check which hives might be good to rear queens from, for example. Equipment needs to be checked, ensuring supers and brood boxes are bee-tight. And above all, learn, go to conventions, refresh your knowledge by reading.

Christine then moved on to talk about spring cleaning at the first foundation for the season. Choose a shirt-sleeve day – maybe as early She then went through the

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as mid-March - and remove burr comb and the like as you move frames from an old brood box to a enough space to lay and maybe add a super if the colony is big. Feed if necessary.

Changing wax will create a brood break as well as clearing out old, hardened wax, and so helps reduce mite loads. Don't let the existence of old crystallised stores inhibit you from doing this, was Christine's advice, as the bees are unlikely to use it, and old, well-used cells will be smaller inside, resulting in smaller bees. Do this at least every three years, using comb which can inspection, and its importance as a be drawn the year before in a honey super.

processes of Bailey comb change and shook swarms, both of which have been explained at previous meetings. There is also much detailed advice on the web.

The final element of Christine's thorough and entertaining talk was a fascinating illustrated story of how she was called to sort out old broken-down hives stuck in a bramble bush, and over the course of a couple of years, moved the large colony into a standard National hive.

Tea, cake and biscuits followed.

## Honey bees increase their foraging performance and frequency of pollen trips through experience submitted by Tony Robinson

Honey bee foragers must supply their colony with a balance of pollen and nectar to sustain optimal colony development. Interindividual behavioural variability among foragers is observed in terms of activity levels and nectar vs. pollen collection, however the causes of such variation are still open questions. Here we explored the relationship between foraging activity and foraging performance in honey bees (Apis mellifera) by using an automated behaviour monitoring system to record mass on departing the hive, trip duration, presence of pollen on the hind legs and mass upon return to the hive, during the lifelong foraging career of individual bees. In our colonies, only a subset of foragers collected pollen, and no bee exclusively foraged for pollen. A minority of very active bees (19% of the foragers) performed 50% of the colony's total foraging trips, contributing to both pollen and nectar collection. Foraging performance (amount and rate of food collection) depended on bees' individual experience (amount of foraging trips completed). We argue that this reveals an important vulnerability for these social bees since environmental stressors that alter the activity and reduce the lifespan of foragers may prevent bees ever achieving maximal performance, thereby seriously compromising the effectiveness of the colony foraging force.

Social insects are reliant on the forager caste to supply resources for the whole colony<sup>1</sup>. However, not all foragers contribute equally to the collective effort of colony provisioning, which raises the questions of how and why such inter-individual variability is observed.

In social bees, adequate colony nutrition requires a supply of both pollen (rich in proteins and fat) and nectar (simple carbohydrates). It has been argued that having different individuals specialised for nectar or pollen collection is the most efficient strategy at the colony level, due to the different spatiotemporal distributions of these major nutritional resources in the field and to the need for specific behavioural skills to collect each of them. This is generally assumed to be true for honey bees where pollen and

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nectar foragers are considered as different behavioural castes that differ in their brain neuropeptide profiles, sucrose response threshold, ovary size, levels of vitellogenin limited sample size and focused on (a yolk precursor protein) and responses to social stimuli (pollen foragers rely more on dance communication). Together with evidence for genetic variation, these observations suggest that pollen and nectar collection are evolved specialisations within the foraging force of the colony. However, recent behavioural studies suggest that the distinction between pollen and nectar foraging may not be absolute. A proportion of the foragers seem to collect both resources, or may change specialisation as they age. These studies, either conducted on a very limited number of individuals (less than 30 bees),or in spatially restricted flight cages with a few abundant artificial pollen or nectar sources, call for further investigations. So far, no study has analysed the long-term foraging preferences of a large cohort of honey bees in the natural environment, and thus, data on how foragers partition their effort between pollen and nectar collection across their lifetime are limited.

In addition to variation in the type of resource collected by foragers, some individuals forage more actively than others. Tenczar et al. reported that the majority of foraging trips were performed by a minority of honey bee foragers, which they termed "elite bees". In this study, however, the authors were not able to measure bees' foraging performance in terms of amounts or rates of nectar or pollen collection, but only on the number of trips completed. Without this information, it is not possible to know if the most active foragers are also the most successful. One potential cause of inter-individual variation in foraging performance is the amount of experience gained by foragers over previous trips. Dukas and Schippers et al. both showed that individual honey bees improve their foraging performance with experience.

While both studies recorded individual behaviour in detail across the whole foraging career of individuals bees, they did so on a rather nectar resources only.

Here, we explored the nature and possible causes of variation in foraging activity and performance between honey bee (Apis mellifera) foragers using an automated behavioural tracking system at the hive entrance to monitor the foraging behaviour of a large number of bees (>260) from two colonies in the natural environment. The hives were located in a room and connected to the outside environment via a specially designed entrance containing baffles that forced bees to exit the hive along one path and to enter using a different path. Our system employed radio frequency identification (RFID) technology for the detection of arrival and departure times of individual bees at the colony entrance and interpolation of individuals' foraging trips. We also used a digital camera to photograph returning foragers and digital balances to record their mass. From these data, we analysed how individual bees differed in foraging performance throughout their entire foraging career.

Full article and results at: https://www.nature.com/articles/s41 <u>598-019-42677-x</u>



## Photo Corner





Photos of the January Winger Meeting submitted by Bob Curtis.



#### **B&L Divisional Diary 2020**

#### Indoor meetings:

Meetings are held on the 3<sup>rd</sup> Wednesday of the month, October to March at Cliffe church hall, Lewes, unless otherwise stated. Members are invited at 7.00pm to assist with setting out chairs etc. ready for a 7.15pm start. Non-members are always welcome.

#### Winter programme:

15th January 2020: Spring Preparation with Christine Stevens.

19th February: AGM + Honey & Mead Show + Mini-Auction.

18th March: Swarming—Prevention and Control with Amanda Millar.

Dates for your diary:

7th March: Sussex BKA AGM, Luxford Centre. 25th April 2020: Bee Disease Day, Ringmer. 16th May: Sussex BKA Bee Market, Heathfield.

#### West Sussex BKA Annual Convention – Saturday 29th February 2020

Lodge Hill Centre, Watersfield, Pulborough, West Sussex, RH20 1LZ

Not to be missed!

We again have a renowned group of speakers and an impressive mix of lectures and seminars with something for everyone. Our main speakers are **Marin Anastasov NDB**, **Professor Robert Pickard** and **Dr Anna Oliver**.

A simple lunch will be included and there will be many opportunities to catch up with fellow beekeepers from around the county and beyond. As always, Paynes Southdown Bee Farms will bring a range of equipment and books to the Convention for you to purchase.

We have already had a lot of interest in the event and encourage your members to book early to ensure that they secure a place on their preferred seminars.

Full details are now on the website with speakers' profiles and a Booking Form to download: <u>www.westsussexbeekeepers.org.uk/</u> <u>convention.html</u>

www.westsussexbeekeepers.org.uk

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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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