



CANTERBURY BEEKEEPERS



A branch of Kent Beekeepers Association

EDITOR'S NOTES

As I look back at previous years' March newsletters, it seems that the unpredictability of the weather is a recurring theme. What marks this year out as different is the number of storms that have blown in from the west, and Brendan, Ciara and Dennis have certainly given this winter a wet and mild outlook that is not so welcome for bees and beekeepers. A couple of my hives ended up tilted at a very jaunty angle, but as they were strapped together, no real harm was done. I also had an old pear tree blow down in storm Ciara – but it was scheduled for removal, having died last Spring, so it made the tree surgeon's job a little easier!

All of this got me thinking about how wind affects bees, so there's a brief article on p4 summarising well-established and recently published information.

I missed February's meeting due to a work trip, but I heard that it was an interesting discussion about bee medicines. One of the few advantages of a long week travelling was that I

got to watch the film "Honeyland" on the flight. For those of you that haven't heard about it, this is a documentary about modern day pressures on traditional approaches to beekeeping, as practiced by a rather lonely beekeeper in North Macedonia, who spends her days looking after her blind mother and her bees. It definitely is a good use of 90mins of your time, and I can see why it received two Oscar nominations. Here's a [good review](#) of the film. But be warned, if you don't like to see children being stung by bees, due to the foolishness

of their parents, you might have to look away in a couple of scenes!

Your preparations for the Spring should be well advanced by now, based on your plans for the season. At our upcoming branch meeting we will take the opportunity to review the activities in our Palmsted apiary, and set out some new goals for 2020. We are always willing to try out projects suggested by members, especially if they offer support, so please bring your ideas along to the meeting. Adrian

Indoor Meeting

**Branch
apiary
management**

**Whitefriars
Management
Suite**

Canterbury

Wed 11th March

7.30-9.30

Details on p2

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The easiest way to contact us is via email using the links above, but you can also use the contacts page on the website.

Contact [Newsletter Editor](#) to contribute articles

MARCH 2020

DATES FOR DIARY: yearbook at <http://canterburybeekeepers.org.uk/calendar/cbka-list/>

Wed Mar 11 (tbc)	Branch meeting: Palmsted apiary planning, 7.30-9.30pm Whitefriars management suite
Mar 12	Committee meeting 7.30-9.30pm, Duke of Cumberland, Barham
Sat Mar 14	Beetradox 2020, Stoneleigh Park, Works, CV8 2LG
April 3-5	BBKA Spring Convention, Harper Adams University, Newport TF10 8NB
Sat April 4	Branch apiary meeting, 2-4pm Palmsted Wood. Getting the apiary ready for the season
Sat May 2	Branch apiary meeting, 2-4pm Palmsted Wood. Disease examination and growth assessment
Sat May 23	Meet the public: BeeDay in Whitefriars, 9am-4pm
Sat June 6	Branch apiary meeting, 2-4pm tbd
Sat July 4	Branch apiary meeting, 2-4pm tbd

You can get our calendar to integrate with your smartphone. For more detailed instructions, see page 4 of our [September 2019 newsletter](#).

INDOOR MEETING

Branch Apiary Management 2020

Wednesday 11th March 2019, 7.30-9.30pm
Whitefriars Conference room, Canterbury

Our branch apiary has many possible functions for the branch, and we need to agree what is important enough that folks will volunteer to help make the activities happen.

We will continue to maintain about 6 hives there, so that we can run meetings demonstrating various husbandry practices, generate some summer honey (for sale at our meeting the public events), and also provide an apiary suitable for members to use for BBKA basic assessments. Other activities are possible and we we'd like to hear your ideas (and commitment).



DIRECTIONS

Whitefriars Conference room, Canterbury
By foot / BUS

Between the Bus Station and Whitefriars centre there is an alleyway between Boots and Next. Here there is an entrance to the car park. Go to the first floor by lift and turn left out of the lift through double doors. The management suite is 20 yards along this corridor.

By car Set SatNav post code to CT1 2TF

Go around the ring road and at the roundabout opposite the Police Station turn through the city walls into Watling Street. Go past the bus station on your right and the Whitefriars multi-storey car park is straight ahead and right at the mini-roundabout. If coming from the south go down the Old Dover Rd and straight across the roundabout through the city walls.

Free parking in the multi-storey car park. Collect your ticket and this will be processed during the meeting. Park on the 1st floor on the left and take the corridor down to the management suite at the bottom of the corridor on the left. Please car share if you can, since Whitefriars have to pay the cost of this on our behalf.



BRANCH NEWS

Swarm management

This will be a topic for a separate, dedicated communication, but here's a heads-up on the process we will run in 2020 for swarm collection and distribution.

The branch provides an important public service in removing honeybee swarms from places that they are not wanted. BBKA have a [swarm removal webpage](#) that acts as a centralised place for members of the public to get in contact with a local beekeeper. We plan to use this as the main contact mechanism for our area. Whilst we are keen that as many members as possible will volunteer to help out, we do recognise that not everyone is in a position to make continuous commitments.

To help with this, we have set up a "swarm hotline" so that the calls can be centralised. We hope that many members will agree to be a proxy, so that we can register their name and location on the BBKA site; crucially, the contact phone number can be the "Canterbury Swarm hotline" – 077 2660 2665. Given the size of the area in which our members live, having many members listed should mean we get to rescue swarms that would otherwise be lost. Dougal Hendry has set this up, and will need help to manage swarm collection during the busy periods in May and June.

We will also want to establish a list of people who would like to receive swarms – either to start out on their beekeeping adventures, or to re-stock. We will give priority to members who have attended our training courses, and have got a mentor to help them through the first year. See the neighbourhood group section for more info on mentors.

Look out for further communications on swarm removal and receipt in the coming weeks. In the meantime, check out Dougal's article on pp5-6 summarising the husbandry tasks necessary to look after a freshly captured swam.

Neighbourhood Groups

If you are a new beekeeper and would like to have a mentor for the first year or so, please also speak to your local link person who can advise of someone either within your area, or if not available there, will put you in touch with someone willing to mentor you.

At the moment there are groups in:

Canterbury - Magdalene Mei Halkes ([email](#))

Faversham - David Austin ([email](#))

Womenswold (and surrounding villages) - Contact Maggie Mackenzie ([email](#))

Folkestone area - Debbie Burton ([email](#)) or Dougal Hendry ([email](#))

Grove Ferry/ Preston/ Wingham - Janet McDonald ([email](#))

Broadstairs/ Thanet area - Martin Swift ([email](#))

Deal – Adrian Davis ([email](#))

Photos for Club Calendar

If you would like a Bee club calendar for 2021, with a variety of photos from this year, and with any proceeds going to the Club, please could you send me photos each month so that I can organise a calendar at the end of the year. Monthly photos show the bees in the changing seasons and events of the bee keeping year so it would be great to reflect that in a calendar. No need to be a top-quality photographer - just snaps from phones is fine. Send to janet.mcdonald@btinternet.com

HONEYBEES AND THE WIND

Aside from making sure that hives are well anchored, and have enough stores to get them through the bad weather, there's been little to take us into the apiary in the last month. With the wind whistling in the chimney, it got me thinking about the impact that strong winds have on bee foraging behaviour, and bee flight generally.

Most beekeepers will recognise that bees forage more frequently on warm, still days than on windy or cold days. One rarely sees honeybees out flying when the temperature is less than 10.C. But if you are like me, you perhaps haven't stopped to think about why this might be – other than it's a behaviour that is common in many animals, including ourselves. However, from an aerodynamic point of view, this is not so obvious.

Pilots will tell you that they get more lift on cold days than warm (the air is denser) and they always take off into the wind, as this will also increase lift. Given that a Boeing 747 broke the speed record from New York to London recently, strong winds can lead to fast, efficient flight. So, why don't bees fly in strong winds?

Firstly, let's look at the energy requirements for flight. Whilst a bee is in flight, only 5-10% of the energy consumed is actually converted into the aerodynamic forces required – most of the energy is lost as heat. Bees, as most insects, have incredibly high metabolic rates to generate the power needed for flight. Given that this is about 100W/kg, this far exceeds anything humans can do. A Tour de France rider might be able to muster 7W/kg, and recreational cyclist would struggle to sustain 3W/kg even in a short burst.

To achieve this power output, the bee must raise the temperature of the huge muscles in her thorax to over 28.C, so the muscles can be powered sufficiently to make the ~[230 beats/sec](#) necessary for flight, and the thoracic temperature is maintained during flight. If the external temperature is low, then cooling is more rapid, and bees have adaptations so that hot haemolymph leaving the thorax into the abdomen exchanges its heat with the cold, oxygenated haemolymph being pumped in by the heart. A bee that lands after flight will typically have a thoracic temperature of 35-41.C, even though the abdomen is close to ambient temperature.

It's a well-known observation that bees fly lower on slow upwind flights than when moving fast downwind. In flight, honeybees appear to use

two methods to judge their speed – the bees use 'optic flow', the stream of visual signals provided by their eyes as the landscape speeds past to measure ground speed. They seem to prefer a constant optic flow, corresponding 18-24 km/hr, hence the lower altitude at slower speed.

Their antennae are held forward in a characteristic manner during flights, and [it is thought](#) that the degree of bending of the antennae caused by the air flowing over the head is effectively measuring air speed. For those of you who have studied bee anatomy, the mechanoreceptors in Johnston's organ at the pedicel are thought to respond to bending of the flagellum. Bees appear to combine the information on ground speed and air speed to adjust the position of their abdomen for optimum flight.

In [very new research](#), published by University of Sussex, the relationship between flower foraging and windspeed was measured in a specially built wind tunnel. The scientists recorded the number of successful flower visits, time spent flying, search time on a flower and hesitancy to take off. Bees visited significantly fewer flowers with increasing wind speed which was caused by a significant increase in hesitancy to take off. The bees' average take-off time increased from 0.05 seconds to 54 seconds during windy conditions. This was attributed to the cooling effects of wind increasing the "warm-up time" of the flight muscles.

The results suggest that it is the direct effect of wind on hesitancy to take off that has the greatest effect on honey bee foraging rate. And overall, we should say that honeybees are very sensitive to the wind chill index (or apparent temperature).

There's a whole other article that could be written on the movement of the bees' wings that leads to lift and flight – and how the thoracic muscles work. However, I will just observe that the wings execute a figure of eight motion, that leads to the generation of a complex series of vortices from both the leading and trailing edges of the wings, so my earlier analogy with the relatively simple aerodynamics of fixed-wing 747s is entirely misleading!

Reference: "Form and Function in the Honey Bee", L. Goodman, 2003. IBRA



“HIVING” A SWARM

Having caught your swarm, the next part of the game is to get the bees settled and established in their new home - which begins with them 'investing' in making comb for their new nursery and larder.

But they might be anxious to “abscond”, and set up home elsewhere. This is a particular risk when you give them a brand new box. Bees love a recommendation from previous (bee) residents, and nice and new is simply not as attractive as “pre-loved”! To prevent absconding, you can restrain them, but only for a few days - which can be done by using a Queen Excluder (“QX”) to prevent the Queen leaving, and of course they aren't going to go without her.

One downside to using a QX is that any Drones will also be trapped, and may well die stuck in the QX. While bad for those unimportant Drones, it could become worse for the rest of the colony. If the bees are being left in their capture nuc hive, the small entrance QX can become completely blocked with Drones, preventing the workers going about their business. So, if using a nuc for initial establishment, you need to check at least daily that the entrance is clear (something like a chopstick is handy for this).

If the swarm is to be transferred on arrival into a full-sized hive, put a QX immediately above the floor and under the brood box, before transferring the bees. If it is a floppy QX, ensure the Entrance Block prevents it sagging and creating an unintentional open exit! The big QX isn't going to become blocked with Drones.

The other problem with using a QX to imprison the Q is that, if it is a 'cast' swarm (headed by a Virgin Q), she will need to get out for her mating flight.

For these reasons, the QX needs to be removed from the entrance/exit (or under the brood box) after about three days, by which time one can expect the bees to have drawn some comb and committed themselves to staying.

Making wax to draw out the comb uses up a lot of the bees' fuel, the honey that they 'tanked up on' before leaving their old home. If the swarm came from an unknown source, that honey could be carrying a disease, even Foul Brood. So it is a good idea to try and get them to use up (and not store) the honey they have brought along - and the best way is to force them to



use it in comb-making, by delaying the start to your feeding them. (A council of perfection is to burn their first efforts at comb-making, but few beekeepers go that far.)

If the bees have been hanging around for a couple of days before being collected, they might already have used up much of their on-board stores, and so, if that seems to be the case, they may need early feeding to fuel their wax-making (and prevent starvation). Early feeding can be merely refuelling to enable absconding, so don't feed in the first days unless you are using a QX to prevent absconding!

You'd feed a 'normal' swarm after about three or four days, when you can see that they are foraging happily and have built some comb.

The feed would be a 50/50 (by weight) mixture of white granulated sugar dissolved in warm water. The bees should take it quickly, and you may find yourself refilling the feeder daily. You want to be helping the bees to draw as much comb as possible while they are in 'swarm mode'. A newly-arrived swarm is programmed to be a comb-making machine. Your job is to help them, with fuel, to build lots of comb (by a little judicial re-arrangement), rather than their idea of the bare minimum that they need for now. If you get it right, they will draw out their whole brood box, and make your bee-management easier, because they aren't short of drawn cells (which would cause your new colony to itself divide by swarming!) So feed them as much weak syrup as they'll take, and lightly shuffle the frames, so that the bees still think they have a job to do, making wax.

The warmer their hive, the easier it will be for them to make wax. Once they drop out of 'swarm mode' and lose their enthusiasm for wax-making, they will then (only reluctantly) make a little more wax, as and when they think it is needed (which may not align with what you, planning ahead, might want.) There is a suggestion to help with this problem at the end of this article. Remember that wax-making bees form characteristic “festoons” - so you can tell what they are up to!

To keep them happily making wax, ensure they are never short of weak syrup, and that they have a job to do (the nest area isn't neatly completed).

However, once they stop making wax, and start storing the food you are giving them, it is time to stop feeding. Excess stores will

reduce the Q's laying opportunity and again promote swarming! And of course, giving strong syrup encourages the bees to store it, rather than to consume it. 50/50 is as strong as you should go when providing fuel for immediate consumption.

If you have a prime swarm (so with a mated and laying, but older Q), then Q will start laying almost as soon as she has a bit of comb to lay in. A week after arrival, you should be able to see the little white "Michelin men" larvae. Once Q is laying (indicating that they are well-settled and not absconding), but before there is any capped brood, there is a very brief opportunity to give an Oxalic Acid-based anti-varroa treatment. Refer to the NBU's "Managing Varroa" booklet, ask for advice within the branch, and pre-prepare.

However, if you don't see eggs and larvae after a week or so, the probability is that you have a Virgin Queen, who needs to be left alone to get mated.

Just watch from outside, keeping an eye on the amount of pollen being carried home by returning foragers. Once the Q is mated and laying, there will be a step-change increase in the amount of pollen to be seen going in, and that is your cue to resume inspection of the colony.

If there is no brood visible 5 or 6 weeks after you hived the swarm, then the probability is that the Q has failed to mate properly, and if it's your only colony, you need help from another beekeeper (and fairly quickly!)

Once Q is mated and known to be laying, only then (not before) should you try to find and mark her. Once you have her nicely marked, she can be found much more easily for subsequent wing-clipping or other manipulations. Of course you should be noticing that her brood is largely Workers. If it is all (or largely) Drone, then she hasn't mated properly and needs to be replaced.

And once there is brood, you should be checking that it looks good and healthy. The NBU offer excellent free booklets on recognising the Foul Broods, and distinguishing them from things like Sac Brood, which are massively less serious. A mentor or local group is how the branch is best able to provide reassurance and assistance. It is a legal requirement that you inform the NBU Bee Inspectors if you suspect Foul Brood.

I'll end with a trick for getting more comb drawn, if the initial 'swarm mode' didn't get you a box full of drawn comb.

I think this is the only time it actually matters whether your hive is "Warm Way" (frames side-to-

side) or "Cold Way" (with frames back-to-front of the hive), and they are just names, there is no temperature difference really!

Fact #1: bees will tend to store honey at the back of the hive. Therefore "Cold Way" frames will have honey towards one end of the frame, whereas with "Warm Way" the back frame(s) can be entirely stored honey, with no brood.

Fact #2: bees need to be very warm (40°C?) to make wax, and to have plenty of sugary food available

Fact #3: bee brood needs to be kept fairly warm (34°C)

So if we use Warm Way, we can separate any all-stores frames at the back from the last brood frame, and insert (only) one foundation frame into the gap created. Snugging the frames together again, that foundation is in what I call the Hot Slot. It is where the bees are going to be wanting to expand the brood nest, so they want to draw comb there, and it is nice and warm (next to brood), therefore easier to super-heat for wax-making, and right next to the stores to fuel the wax-making. They have both the incentive and the means to draw out that foundation!

Hence the frame inserted into the Hot Slot will be



drawn much more quickly than if it had been placed anywhere else. The same trick can be repeated, one frame at a time.

You could even put a shallow (super) frame into the Hot Slot for a single day, (and repeat with another frame or two), so that your first super isn't going to be full of completely undrawn foundation when you need the bees to start using it.

Remember that you can only create a Hot Slot with the Warm Way arrangement. Of course, once the whole brood box is drawn, you can rearrange things as Cold Way, if you prefer working the hive from the side rather than the back.

Hopefully these notes will give you some idea of the sort of things you need to bear in mind, to develop a stray swarm into a happy, healthy and productive colony.

While I wish you good luck, I do hope you can see how you needn't rely on luck alone!

Dougal Hendry