



THE IPSWICH & EAST SUFFOLK BEEKEEPERS' ASSOCIATION  
First Founded 1880; Charitable Incorporated Organisation 1183025

## 2024 New Year Newsletter

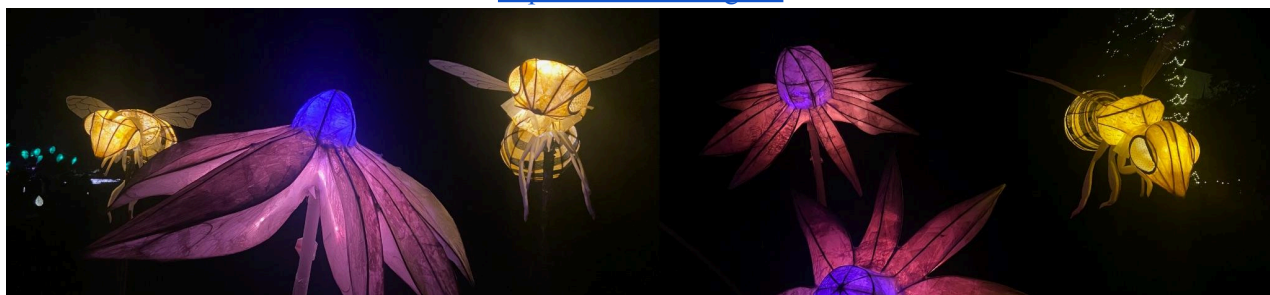
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*Opinions expressed in this Newsletter are not necessarily either those of the Editor or of the Association*

The Suffolk Beekeepers' Association is an Area Association of The British Beekeepers' Association  
<http://www.bbka.org.uk/>



Well, with the first reported credible sighting of an Asian Yellow Legged Hornet in Hastings, we're not off to a good start. If it turns out to be correct it's almost certainly an overwintering queen. Thankfully with all the attention they have been getting local associations are gearing up to put out traps in the next few weeks. Jeremy Quinlan in his newsletter article 'Countering the Asian Hornet' outlines what we are doing.

There is a bumper crop of articles in this newsletter, so plenty to read covering pollen distribution, queen rearing, overwintering, artificial insemination, caterpillar grub, varroa control, and a couple of book reviews. If there is anything you'd like to report for the next or future newsletters, please get in touch.

In other news, it's that time of year where you are tidying up your apiary(ies) ready for the mayhem in May that counts for the peak of the active beekeeping season. I had a group of four nucs on a stand & wasn't sure if they were still alive, but as there is nothing I could do I was leaving them to it with some fondant. Underneath was messy with grass and a few brambles so I had a quick pass with a hedge trimmer to clean it up. An accidental touch to the stand and I can report that all four nucs were well and truly alive (slinks off to put a veil on for the rest of the clean up!)

Ed.

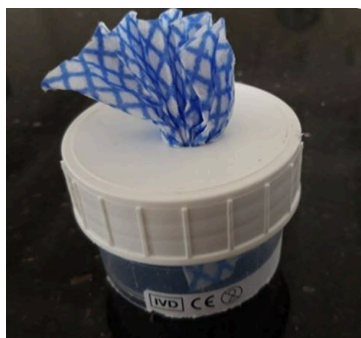
## Countering the Asian Hornet – what every beekeeper should do

We have all heard awful reports of what Asian Hornets can do. Obviously, the first thing to do is find any that arrive so they can be destroyed. While the English south east coast is the prime invasion area, inadvertently transported by car or truck, they may appear anywhere. So, put out traps. Although rather small, the simple trap made by the French company Veto-Pharma seems good. Thorne's sells them @ £6.00. Naturally, others are available. Traps should be out from the end of February. Asian Hornet queens will start flying, looking for a nest site, if the air temperature is 19°C for 3 days.

But that's not enough.

The traps must contain an attractant and "Trappit" @ £20/5 litres is currently thought to be the best. Thorne's attractant is not so highly regarded. Others use sweetened fermented pressed (not 'box') apple juice. Importantly, these do not attract honey bees. The Ipswich & East Suffolk BKA will buy some Trappit and supply those who ask. There will be an opportunity for members to collect some at our AGM in the Kesgrave Scout Hall on Wednesday 7th February. Please bring your own bottle.

The danger with traps is that many beneficial insects may be caught and killed<sup>1</sup>. Many insects are generally in trouble too and we certainly don't want to make their situation any worse. Traps MUST BE inspected EVERY DAY and any beneficial insects in them released. Better still, make some small slots around the top so they can release themselves. Hornets cannot get through holes 5.5mm in diameter. Traps are best outside your back door or kitchen window. They should not be in the apiary. Put them out from late February. Should you catch an Asian Hornet, put the whole trap in the freezer; an Asian Hornet sting can put you in hospital. Report it!



As insects readily drown in liquids, your Trappit should be in a small wicked container – as shown in the picture below – and then that container put into your trap. Using a

wicked container protects your bait from rain or blowing away and helps it last. During the period from August to November, the demand for food increases as the number of insects begins to decrease. This is when hornets begin catching honey bees. Putting out traps then will be a useful way of reducing the stress on an apiary. Unlike our native hornet, these do not fly after dark. Their foraging range is a bit more than a kilometre.

If you want to read more, Cornwall BKA have put together a resource pack here:

<https://cbka.co.uk/asian-hornet-resource-pack/>

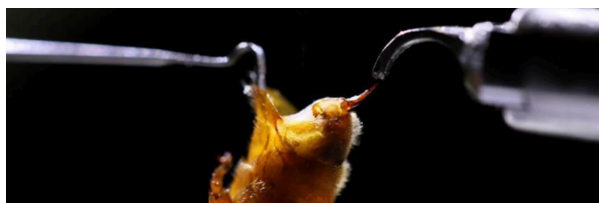
Jeremy Quinlan

<i>Recent additions to the I&amp;ES BKA Library.</i>	
<i>Speak to Gillian at our monthly winter meetings or order them here:</i> <a href="https://www.suffolkbeekeepers.co.uk/esbka-lib.php">https://www.suffolkbeekeepers.co.uk/esbka-lib.php</a>	
<i>Dr Sarah's Honey Potions</i>	Dr Sarah Robb
<i>Endless Forms The Secret World of Wasps</i>	Seirian Sumner
<i>Food Safety For Beekeepers</i>	Andy Pedley
<i>Using Apideas</i>	Daniel Basterfield
<i>Heredity in Honey Bees &amp; Honey Bee Colonies</i>	Bernard Sauvager
<i>How do bees (and humans) see grey levels?</i>	Adrian Horridge
<i>Honey Bee Alchemy</i>	Valery A Isidorov
<i>A Lifetime of Beekeeping Mistakes</i>	Geoff Critchley
<i>Honey Bee Biology</i>	Brian R Johnson
<i>What a Bee Knows</i>	Stephen Buchmann
<i>Healthy Bees, Heavy Hives</i>	Stephen Donohoe & Paul Horton

<sup>1</sup> Known as bycatch

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## Artificial Insemination of Queen Bees



Barrie Powell and I wanted to reach out prior to my talk at Kesgrave in March on the subject of the artificial insemination of queen bees. We have closely studied the rearing of queen bees for a number of years and realise the many advantages of a well mated queen and the importance of a bee to suit your area.

We are looking to form a Co-Op of beekeepers to help us develop an East Anglian Centre of Excellence for Queen rearing and breeding. We shall need help from you, the Beekeepers, to test our results. Initially we are planning to supply the queens but shall require you to supply the drones of your choice. These drones, from your favourite hive, will need to be in excess of 15 days old and mature for mating.

Brother Adam, as you may already know, was the foremost authority to study this subject and spend his entire life searching for the perfect bee. A bee that would meet his expectation would have to be:

- Easy to handle.
- Fast to build up in time for the honey season.
- A good honey gatherer.
- Lack the swarming instinct.
- Resistant to diseases.
- Thrifty, with good wintering capabilities and of course, a bee to suit your area.

We feel we can make a contribution in making steps towards producing a more resilient bee and will of course give you every assistance and full guidance on evaluations. This region has all the resources needed and with your assistance, selected queens mated with your drones should ensure a strong local adaption.

Please consider if you would like to join us on this most interesting journey. Initially, please register your interest with Barry Powell ([beepowell.powell@gmail.com](mailto:beepowell.powell@gmail.com)) and/or John Days ([johndays01473@btinternet.com](mailto:johndays01473@btinternet.com)).

Look forward to meeting and talking with you during your meeting at Kesgrave.

John Days

### ***Help! I need somebody.***

The Suffolk Show Committee will be looking for a Treasurer in the near future. Any volunteer would be given help by the current Treasurer to ensure a smooth transition. Contact Mark Dua ([markdua674@gmail.com](mailto:markdua674@gmail.com)) if you are that somebody

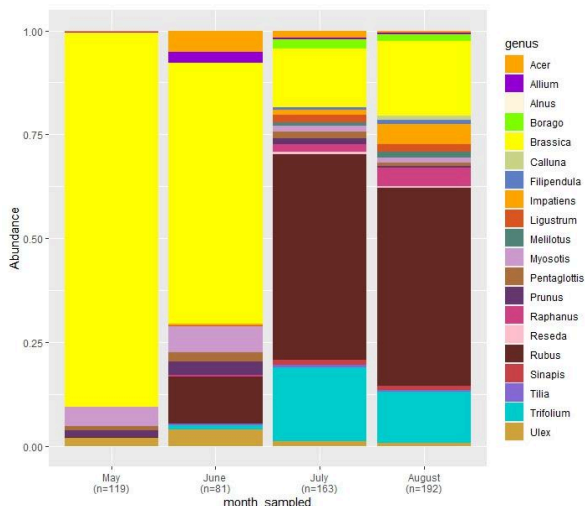
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## National Honey Monitoring Scheme - 2022 Update

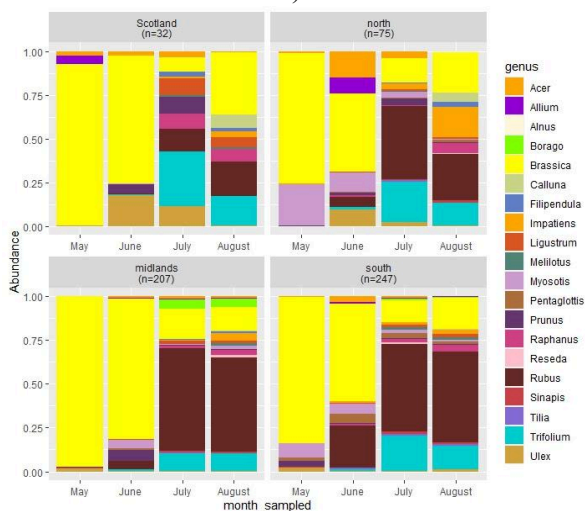
*The National Honey Monitoring Scheme has been going since 2018 and aims to use honeybees to monitor long-term changes in the condition and health of the UK countryside. Beekeeper supplied samples of honey are examined for their pollen content and pesticide residue which helps to build up a picture of the threats to floral resources. The information below is reproduced with permission from their latest newsletter.*

Today I thought I'd share with you an overview of the 2022 pollen data so far. All of the sequencing is now complete for the 2022 samples and ~800 of you have already received your results. The remaining ~400 will receive their results in January.

The first 800 samples sent in for 2022 were collected between May and August and the below plot shows the top 20 genus of plant pollen detected in them. I've aligned the colours such that Brassica is yellow - this predominantly represents oil seed rape so it seems fitting! Overall, in May and June the bees are mainly feeding on oil seed rape and other Brassicas and this drops off dramatically in July and August to be replaced by Rubus (brambles/blackberries) and Trifolium (clover).



You may spot in the plot above that the numbers beneath the months, showing how many samples were collected in each month, do not add up to 800. This is because for the analysis step we have to be quite strict with which samples to keep in - a process that is called **rarefaction**. Even though we take steps to avoid it - known as **normalisation** - ahead of sequencing, all the samples end up with very different numbers of sequencing reads in - called **sequencing depth** - and we need to make a decision on the number of reads that represents true pollen diversity within the sample and across the dataset. When a sequencing run goes well, we expect the majority of samples to contain 10,000+ sequenced reads so this is the cut-off I have applied here, which means that all samples containing <10,000 reads are removed. We send you the sequencing data for your sample regardless of the number of reads because it still shows what your bees have been feeding on. (I have highlighted the technical terms in **bold** so you can Google them if you are interested to know more!)



If we split the sequencing data by where in the UK the honey was sampled from, we see a slightly different pattern. The overall trend, in the first plot, is being driven by honey from the Midlands and from the South as these make up the majority of 2022 samples. Results from the

Midlands and the South are mostly similar, apart from more Borago (borage!) being foraged by Midlands bees in July and August compared to more Trifolium (clover) being foraged by Southern bees in these months. In the North, there is greater foraging on Myosotis (woodland forget-me-not), Acer and Impatiens (Himalayan Balsam) than elsewhere. There are considerably fewer samples from Scotland and I was intrigued to see such a high prevalence of Brassica in May and June in these samples too - a quick Google told me that "Scotland is one of the three key brassica production regions for the UK in addition to Lincolnshire and Cornwall. East of Scotland Growers Ltd and Kettle Produce are important suppliers of broccoli, cauliflower, Brussels sprouts and swedes to supermarkets in the UK." There we go. Interestingly, Scottish bees foraged on a much greater diversity of plants in July and August than in other parts of the UK and we see Filipendula (meadowsweet), Ligustrum (privet), Prunus (plum) and Ulex (gorse) predominating in these honeys.

We have spent some time updating our website so if you are interested to read more about all aspects of the scheme, meet the team, see some preliminary results (other than the ones you are seeing in this email!) and read some of the outputs from the scheme so far - please visit [www.honey-monitoring.ac.uk](http://www.honey-monitoring.ac.uk).

## Module 1 study group

All welcome!

Run by Martin Lewis of West Suffolk BKA every other Monday evening at 7.30pm on Zoom.

Login is

<https://us02web.zoom.us/j/88476799427?pwd=bHl3TXlRYXRGR1REemJSZmRKQzJiUT09>

Meeting ID: 884 7679 9427

Passcode: 018777

The next meeting will be Monday 5th Feb where we'll look at sections 1.11 and 1.12 of the syllabus.



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## Bigger eggs mean better queens.



After reading an article in *The Apiarist*, and a related article in *The Beelistener* they got me thinking about how we go about queen breeding.

David Evans's article in the *Apiarist*, "The Bees Know Best" discusses a piece of research on the emergency response to generating a replacement queen. To jog your memory, the emergency response is when the colony loses a queen and the bees use the available eggs and young larvae to create emergency queen cells, hopefully, one of which will produce the replacement queen.

There were two important points. The bees, once they have created the queen cells, would, in the wild, tear down approximately half of them, and the researchers noted that the best emerging queens had been chosen from three day old eggs.

Anne Chilcot's blog post in *The Beelistener*, "Producing high quality queens" discussed a paper comparing queens from eggs laid in queen cells, eggs laid in worker cells, and queens from 2 day old larvae. The results showed that better quality queens were raised from queen cells, as the queen laid larger eggs in the cells and there was more room for storing food for them.

So there are a few points that should be taken into account to produce larger, better queens:

1. Use larger eggs
2. Allow the bees to police the developing queen cells. i.e.. Beekeepers should be careful about knocking down queen cells
3. The majority of the successful queens come from 3 day old eggs.

The most popular method of queen rearing seems to be grafting. The beekeeper selects a comb containing freshly hatched larvae, and carefully takes a day-old larva from the comb and places it into a ready-made queen cup. Usually 10 or 20 are done at a time and they are then generally moved to a queenless colony to raise the queens.

If bigger eggs mean better queens, grafting doesn't help pick the biggest eggs as they have already hatched.

This leaves us with a problem. How do you pick the biggest eggs to use for your queen rearing activities? It turns out there is a surprisingly easy way to achieve bigger eggs. It has been noted that in larger colonies, the queen lays small eggs, whereas with smaller colonies the queens lay larger eggs. In fact, if you reduce the amount of forage, she will lay even fewer and larger eggs! Here's our answer. To get larger eggs from our preferred queen, move her into a (small) nuc box and use the day old larvae from them to graft with. As an aside, it's interesting to note that queen breeders keep their breeder queens in nucs primarily so they don't have to work so hard. Clearly an added bonus is they will be laying larger eggs too.

Another popular option for larger scale queen breeding is to use a Cupkit or Jenter system. The queen is caged and only allowed to lay eggs in the cells provided. Typically, after four days the cells containing day-old larvae are transferred into your favourite queen raising system (a queenless colony perhaps unless you are a Ben Harden fan). Transferring cells containing eggs would allow the host colony to select the best eggs for queens.

So to meet all three points, transfer the queen to a small colony to promote the production of larger eggs, then use a Cupkit/Jenter system to force the queen to lay in the provided cells, which are moved after three days to allow the host colony to select the best eggs for onward development.

For those who only want one or two queens, the best bet is to wait until your favourite colony begins swarm preparations, and collect those queen cells. Remember all colonies will want to swarm at some point so it is not true you will be selecting 'swarmy bees'.

What is the best queen anyway? As beekeepers we are breeding from colonies that have the traits we desire, and now we can combine it with the bees' instinct to favour particular eggs. In this case to produce queens from larger eggs which will produce more ovarioles, and are quicker to begin laying. As a consequence we'd expect them to be larger. Being larger allows her to fly for longer on her mating flights and therefore mate with a greater number of drones from further away giving more diverse genes.

Probably most important, a larger queen means she is easier to see amongst the bees!

<https://theapiarist.org/the-bees-know-best/>

<https://pubmed.ncbi.nlm.nih.gov/31961025/>  
<https://www.beelistener.co.uk/queen-failure/producing-high-quality-queens/>

Barry Crabtree

### Cambridge Beekeepers Association

Future Challenges: the impact of our changing climate on bees and beekeepers' behaviours

23<sup>rd</sup> March 2024

9.00am Reception with tea and coffee  
 9.45am Introduction with Peter Connor  
 10.00am Dr. Maggie Gill  
 11.00am Tea and coffee  
 11.15am Karl Colyer  
 12.30pm Lunch  
 1.30pm Introduction with Peter Connor  
 1.35pm Diane Drinkwater  
 2.30pm tea and coffee with cake  
 3.00pm Professor Giles Budge  
 4.00pm Panel Q&A  
 5pm closing remarks

<https://www.tickettailor.com/events/cambridgeshirebeekeepersassociation1/1111298>

## Managing colonies over the winter

What happens to colonies after you take your honey crop off?

If you remember you have often been told a beekeeper's year begins in August, so let's use that as our guide. After taking their honey crop off many beekeepers just forget their hives for the next two months and only renew their acquaintance when it's time to feed. Many then feed thick syrup which is immediately capped by the bees as stores for the winter. What they are forgetting is that the hive needs winter bees to see them through to the spring and this syrup needs thinning before it can be fed to the queen and larvae.. It will require hundreds of your worker bees to leave the hive to collect water for this purpose either in the Autumn or the spring.

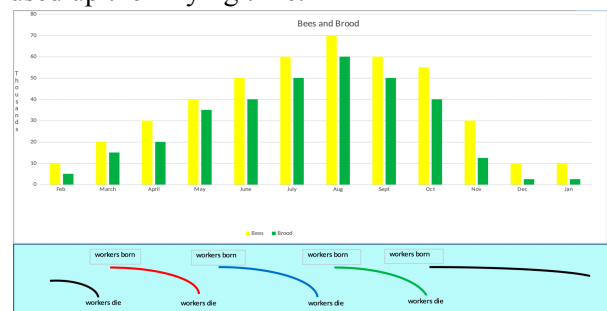
The life of a worker bee is approx, 6-8 weeks depending on the amount of flying it is subjected to in order to service the hive. It is most probable that from the time you removed the honey until September, most of the workers have ended their lives. Where are your winter bees? In fact, investigation/observation show that during the

honey flow, the average life of a worker is only 38 days.

The answer rests with the beekeepers and their management.

1. You must keep the queen laying for as long as possible, which requires thin syrup and ensure that you have a young queen. An older queen will normally stop laying much earlier than a younger one.
2. You must ensure that as far as possible your colony is strong, healthy and disease-free, with plenty of stores and pollen.

There is a seasonally related brood pattern which will exist in your Apiary location and without your intervention will often close your hive down before you expect. Don't be one of those beekeepers who complain about no brood in September. It's up to you if you want your colonies to survive the winter and enter the spring with a good supply of young bees who have not used up their flying time.



In reference to the graphs, you will see that the average lifespan of a worker bee is shown as 6-8 weeks which means a bee born on the 1st August will have died before the end of September and certainly will not be one of your Winter Bees. So what does this mean? It simply means your winter bees must be born much later to ensure a strong hive in the spring. Without this, the hive may see you through the winter. Still, with no bees to gather the earlier nectar and pollen, it will be too weak and take an exceptionally long time to build up, or in some instances will die out with no apparent cause by being too small to sustain itself.

So the solution lies in Apiary Management. Consider, when you take your crop of honey off the hive the bees naturally consider the season has finished and by nature, will begin preparing for the winter. You, as their carer and keeper must convince the colony it is still summer by feeding them thin syrup of a similar density to what they would have been used to collecting (Nectar from the average flowers is approx. 18% sugar) This can then be fed directly to the queen and young larvae.

Thin syrup can be fed through to the end of September, which gives you plenty of time to use thick syrup to top up any hive that's still light. You should, by using this method, have a strong hive full of Winter Bees early in the spring.

One thing I should mention at this point is Ivy Honey. Don't let your bees winter with too much of this honey. It is a good comb filler but contains very little moisture and if given no choice the bees will often die out leaving you with frames full of dried-out crystals, a sign that even during winter your bees still require moisture.

Again referring to the graphs which are backed up by many scientists and eminent beekeepers, it certainly seems we must develop the Winter Bees that are born in late September or early October. The lower graph shows you the approx. life of your worker bees throughout the year and shows you the value of Winter Bees which must live through from October to March. It was originally thought that food fed in the autumn was only intended as a food source that would remain liquid for a longer period, it not only does that, but it appears to cause an *elevated* sealed brood production that occurs in September giving you the much required Winter Bees.

Although data showing brood rearing during the autumn and winter months is rather scarce it does not mean that brood rearing ceases, it simply means that the researchers do not normally open their hive at this time of year. Quite sensible. However brood rearing will still continue, be it a small amount. Especially if you have a young queen and keep your hive warm. Bees still die during the winter months and without a small input of brood the colony will dwindle and be weak in spring.

Records do show that of adult worker bees born before the 31st August only 32% were still alive on the 1st of December but bees born mid-September 74% were still alive and bees born after the 1st October 91.5%. Records also show that for the months between August and October the bees are declining at the rate of 480 per day, so, without new bees being born to replace these bees lost, the colony will become smaller and weaker. As you can see it is very important to keep your hive active and breeding after the season has finished. An interesting observation to see that a package of 0.9 of a kilo of bees purchased in May will have died out by 1st of July. Luckily these packages are normally headed by a young Queen who will start laying immediately and soon join the growth pattern of a normal colony.

One cannot say that Climate Change is affecting our beekeeping but certainly spring crops do come much earlier which in turn means that we must stimulate the bee's breeding habits to correspond and ensure our colonies are ready to take advantage of the crops available. What these observations strongly syndicate is that Autumn is indeed a very important time for beekeepers and demonstrates the importance of Winter Bee, a good queen, healthy bees, and good beekeeping management.

I wish you all a successful year ahead and sincerely hope that I have brought to your attention at least some of the important things that matter in beekeeping today.

Barrie Powell

### The Early Years

A course for progressive beekeepers

Sat 17th Feb: Lawshall, Suffolk

A one-day course to help and encourage beekeepers in their formative years who wish to move on from their initial teaching, gaining ideas, knowledge and skills that should help them understand their bees more, so becoming better beekeepers. The tutors are practical beekeepers who will pass on the experiences gleaned from many years in the craft. For a variety of reasons, beekeepers learn and progress at different rates. To appeal to all beekeepers, the programme has interesting topics that should encourage attendees to find out more and explore different methods, some of which may not be found in standard teaching material.

This course is organised by BIBBA, the tutors are Karl Colyer from Cheshire and Roger Patterson from West Sussex. Visit the website below to sign up:

<https://bibba.com/early-years-events-2024/>

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### Manageable varroa

Varroa that co-exist with a colony of bees without growing to levels that cripple it is on the horizon according to Steve Bailey. I attended a talk he gave on 'Minimal Varroa Treatment and Varroa Management' hosted by West Suffolk Beekeepers & the following is my understanding of what he said.

By treating for varroa we are stopping the bees from developing any natural resistance, and

furthermore are masking any natural resistance they might have; we would never know the colony was varroa tolerant.. Varroa tolerant colonies do exist. *Apis cerana* in Asia has developed coping mechanisms for varroa, and there are pockets of varroa tolerant colonies in the UK.

To understand what the bees need to do to tolerate varroa, it's important to understand the life-cycle of varroa, so here's a quick recap: A female 'mother mite' hops into a cell just before the larva is capped. A couple of days later she lays the first egg - a male, then lays female eggs every two to three days. The eggs take about 5 days to mature into young mites, and then they can mate too. Ideally (for the mites) 9 days after capping a male & female mite will mate, creating another 'mother mite'. If this 'mother' emerges successfully the mite population can grow, and eventually the colony will be overrun & die out.

Some colonies have developed countermeasures to stop the mite population growing out of check. They regularly open capped brood they suspect may contain mites at 7-8 days after capping (this is around the 'pink-eye' stage). This may allow the original 'mother' to escape but disturbs the child mites from mating (especially if the pupa is chewed out!). The growth cycle of the mites is therefore kept in check.

So how can we take advantage of this & move to minimal or no varroa treatment? Well, we need to find out which colonies have this behaviour of uncapping and chewing out pupae. There are three things to look for:

1. Do you see bald brood? That's a good sign and is the bees uncapping the pupae to check for varroa.
2. Do you see chewed out pupae on the bottom board? Also good. The bees are removing infected pupae.
3. Do you have a daily mite drop of less than 5 mites? A low mite drop is a good thing.

If you can answer yes to all three of these questions, then it would indicate you have a varroa tolerant colony, and would be a good contender to use as a source for queen breeding. As it is varroa tolerant you probably don't need to treat them for varroa (but keep monitoring). If you don't see all these indicators, then the colony is not likely to be varroa tolerant and you would need to continue treating them for varroa (and perhaps requeen them from a varroa tolerant colony you have found).

It may turn out that you don't have any colonies that meet these three criteria. In which case you

may want to ask around to see if there are any other beekeepers who have found any and speak nicely to them!

For more information from the groups working on this, take a look at <https://varroaresistant.uk/>

Barry Crabtree

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## Caterpillar Grub

Choosing pollinator friendly flowers which may help slow the decline in pollinator numbers is a popular topic in the media and organisations such as the BBKA and the Royal Horticultural Society produce lists of such plants. Perhaps the reason there are fewer references to forage plants for caterpillars is the public perception that if it's a caterpillar it must be munching its way through the gardener's prized plants. Yes, I know we've all cursed those attractive white butterflies whose larval stage reduces Brassicas to skeletal umbrellas minus the fabric. I grow mine under a fine mesh barrier as I'm not totally convinced by the companion planting argument that suggests Nasturtiums as sacrificial plants lure the butterflies away from your cabbages. However, if we want beautiful adult butterflies and moths flitting round our gardens and countryside, the laws of nature dictate that means caterpillars. They need our help.

Not surprisingly the forage plants of our native Lepidoptera are mostly native plants, many considered "weeds", or their closely related cultivars. Gardeners certainly do not have to abandon growing all foreign plants and grow only natives, and I suspect some of the best native plants for caterpillars may not be top of the list for many traditional gardeners of the neat and orderly persuasion. Nettles, ragwort or thistles anyone? Over the years I have become more tolerant of such plants, but even I make a mental note to pull them out before they seed. I am usually too tardy, but console myself with the hope that all those pretty little thistle parachutes floating on the breeze will provide seeds for the goldfinches.

The aforementioned dreaded Cabbage White butterflies are obviously exceptions, and then there is the criminally hungry Gooseberry Sawfly, but the majority of caterpillars are not present in enough numbers to do serious damage to most plants (fingers crossed behind back.)

Here are some examples of butterfly and moth caterpillars' preferred menu selections:

Nettle - Red Admirals, Peacocks, Small Tortoiseshells

Garlic Mustard - Holly Blue

Nasturtium - Large and Small Whites



Grasses - Meadow Brown, Gatekeeper, Ringlet,  
 Skippers, Speckled Wood  
 Bird's Foot Trefoil – Common Blue, Silver  
 Studded Blue, Green Hairstreak  
 Thistles – Painted Lady  
 Mullein - Mullein Moth  
 Ragwort - Cinnabar Moth  
 Honeysuckle - Elephant Hawkmoth (they also eat  
 Himalayan Balsam.... but no, don't plant it!)  
 Holly - Holly Blue  
 Ivy - Holly Blue, Silver Y Moth  
 Blackthorn - Brown Hairstreak, several moths  
 Hawthorn - Brimstone Moth  
 Lime - Lime Hawk-moth  
 Oak - Purple Hairstreak, several moths  
 Sycamore - Sycamore Moth  
 Willow - Red Underwing Moth, Poplar  
 Hawk-moth  
 Fruit trees - Apple, Plum, Cherry – several moths,  
 of which Winter Moth can be a problem  
 particularly for the growing fruitlets  
 Soft Fruit - Currants, Gooseberry (oh dear,  
 Gooseberry Sawfly!)  
 Docks, Brambles, Plantains, Dandelions,  
 Bedstraws also provide good forage  
 and more traditional garden plants: Foxglove,  
 Primrose, Thyme

For many years we have mown our "lawns" only a couple of times a year and have enjoyed the increase in species of plants and Lepidoptera such as Gatekeeper Butterflies and other insects such as Meadow Grasshoppers. I already see plenty of Holly Blues because we have Holly, the plant the first broods feed on, and Ivy upon which the second generation feeds later in the year. Now I am growing Bird's Foot Trefoil from seed in the hope of encouraging more Common Blue Butterflies.

Another way to make your garden tastier for caterpillars is to grow a native hedge. It also helps survival if tidying and cutting plants back is delayed till spring to provide habitat for overwintering caterpillars and chrysalides, and of course no pesticides or herbicides please!

If you would like more information try the following links:

<https://www.ukbutterflies.co.uk/foodplants.php>  
<https://butterfly-conservation.org/sites/default/files/moth-foodplant.pdf>  
<https://butterfly-conservation.org/moths/why-moths-matter/about-moths/caterpillar-foodplants>

Marian Stephens

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## Honey Bee Biology Book Review.

Ann Chilcott  
 New in the IESBKA library



I was pleased to be invited to review our latest biology book despite the challenging read to capture the essence and give an honest appraisal. This review was first published in BBKA News December 2023.

Title: *Honey Bee Biology*

Author: Brian R. Johnson

Publisher: Princeton University Press

Year published: 2023.

Hardback cover, ISBN 7980691204888

Cost: £38. Available from Northern Bee Books and other bookstores.

Brian R. Johnson is an associate professor in the Department of Entomology and Nematology at the University of California, Davis. He is an expert in the behaviour, genetics, and evolution of honey bees. During his graduate studies at Cornell University, Johnson was mentored by professor Thomas D. Seeley who endorses this masterpiece and credits the author in the Foreword of *Honey Bee Biology*.

The publication of *Honey Bee Biology* is timely since it is over 30 years since the release of Mark Winston's *The Biology of the Honey Bee*, which served as the main reference book for many students till now. Winston's book remains relevant, but it is out of date in the areas of genetics, bee behaviour, nutrition, toxicology, pollination, and immunity. So much more new research informs biology today and is encapsulated within Johnson's *Honey Bee Biology*.

*Honey Bee Biology* contains 19 chapters. There are 481 pages containing the assimilated and updated scientific research results of several hundred years of honey bee science. This is a work of love and dedication. The broad and encompassing literature reviews are reflected in 123 pages of references. There are 8 plates with 16 colour photos, 101 black and white illustrations, and 16 tables. This is a splendidly illustrated

definitive reference book. It is written in a friendly easy-to-read style.

Johnson has written primarily for scientists and he makes this clear at the outset. However, he knows that beekeepers have been waiting for an updated biology book, and many of the chapters are written in such a way that makes the information understandable by readers without a scientific background. These include chapters covering anatomy and physiology, taxonomy, reproduction, chemical communication, nesting biology, parasites and pathology, tropical bees, pollination, and pesticides.

Nearly every chapter reveals something of interest to the beekeeper, though this book is unlikely to be read from cover to cover. Rather, it is a book for dipping into for specific information. It will be used as a reference by beekeepers researching topics when writing articles. The BBKA (British Beekeepers' Association) Exam Board members will delight in its accurate, new information that will inform the updating of their syllabus and examination questions. For example, there is an excellent table of honey bee mechanical signals on page 228, and the descriptive glossary of dances on page 229. The term "round dance" will be relegated to the realms of history.

We discover that there are no clear data and evidence for 2-heptanone being used as an alarm pheromone; rather it signals avoidance of marked flowers to make forage less attractive to fellow foragers. Readers will also be fascinated to learn why the differences in biology and behaviour between tropical and temperate climate honey bees make African bees less at risk from *Varroa* than bees in the rest of the world.

In the pollination chapter, Johnson explores why our dependence on honey bee pollination is unlikely to change while we still grow food the way we currently do under largely unsustainable conditions. Honey bees remain the linchpin of pollination in a risky environment.

An amusing account explains why alfalfa is a crop that individual bees will not persevere in pollinating. When a bee visits an alfalfa flower, the spring-loaded stamens are released

and hits the bee on the head with a jolt, covering her in pollen. It is not good news for the bee who must spend too much time grooming rather than food collecting so she gives up after a few jolts and this crop is not well pollinated by honey bees.

Evidence documented in Reproduction (chapter 8) shows us why using locally adapted bees is better for the bees. Species managed outside their native range demonstrate maladaptive behaviour and this could account for why so many beekeepers experience afterswarms late in the season. This chapter will intrigue and inform beekeepers interested in queen rearing. Find out why duelling queens spray each other with faeces in some situations.

*Honey Bee Biology* will become the new definitive textbook for entomology courses, research scientists, science writers, and scientists interested in bees as a model system. Beekeeping teachers and keen students will buy this book as will the curious beekeeper just wanting to learn new things and be a better beekeeper.

Ann Chilcott

<https://www.beelistener.co.uk/>

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## How to maximise your honey crop



New in the IESBKA Library

A new beekeeping book seems to get published every week, so I have joined the party alongside my co-author, Paul Horton. Our new book, *Healthy Bees, Heavy Hives* — *How to*

*maximise your honey crop* is likely to be out in February 2024. We miss the crazy Christmas rush, but at least it will be available for purchase from the Northern Bee Books stand at The Beekeeping Show. Actually, let's be honest, there is no "crazy Christmas rush" for beekeeping books. Or any other time.

Paul Horton is a well-respected bee farmer based in Lincolnshire. His company is Apidae Honey, and he is the vice chair of the Bee Farmers' Association (BFA), as well as a regional director. When I was forming the idea for the book, I asked several bee farmers about honey crops, and who

were the people who made more than most. Paul's name often came up, so I talked to him about collaborating on a book. The great thing about Paul is that he had numerous strings to his bow:

- Very high annual honey crop (well over 130 lbs per colony) every year
- Former bee inspector, meaning excellent real-life experience of bee health matters
- Migratory beekeeper
- He has loads of gorgeous photographs
- Part of the Knowledge Exchange Groups in the BFA (whereby bee farmers collect and share data for the mutual benefit of all)
- He knows loads of clever beekeepers, who were happy to help out with the book

Evidently, this isn't just a typical, generic book about keeping bees. The bee health chapter is comprehensive and easy to read. The subject of moving bees is covered in great detail, showing exactly how Paul finds places for his bees, and how he safely transports them in his van. If you are thinking of taking bees to pollinate fruit, or to oilseed rape, field beans, mustard, borage, or heather, we've got you covered. The chapter on plants for bees is comprehensive and very helpful.

Luckily, my daughter Isla was available to provide some beautiful illustrations, which take the publication to a new level. Disease diagnosis, swarm control and raising queens are described in words and pictures. Then, of course, there are the photographs. The colour shots are incredible; it's almost a shame to add text when the images are that good.

Paul also shares how he extracts, stores and markets his honey. He provides some eye-opening financial information on his operation; few others ever do so, and this can help those interested in going commercial with their planning.

We were happy to include a piece written by David Wainwright about his style of bee farming, and Thierry Fedon writes about intensive and extensive farming methods. The foreword was kindly written (eventually) by Murray McGregor of Denrosa Apiaries, who appeared as a chapter in my book *Interviews with Beekeepers*.

The chapters are as follows:

1. General Principles
2. Getting Bees Through Winter
3. Early Spring
4. Bee Hives and Equipment
5. Queens
6. Diseases & Pests
7. Plants For Bees
8. Swarm Prevention & Control
9. Migratory Beekeeping
10. Staying Put

## 11. Harvesting, Processing, and Selling Honey

As you can tell, this blog post is really just a giant advertisement. Sorry about that. Occasionally, these things just have to be done! Paul and I will be doing a bit of promotion for the book after Christmas. Who knows, we may even appear on the odd YouTube channel and podcast. Getting anyone to part with the best part of £30 on a beekeeping book, even one as spectacular as ours, is a tall order. We were inspired by Manley's *Honey Farming* and Oliver Field's *Honey By The Ton*, so hopefully the writing style and practicality of *Healthy Bees*, *Heavy Hives* will be in keeping with those masterpieces.

Steve Donohoe

<https://thewalrusandthehoneybee.com/healthy-bee-s-heavy-hives/>

### Richard Martin Beekeeping Supplies

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Agent for Thorne's of Wragby  
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Creeting St Mary. IP6 8PX

Opening hours: 1 April - 30 Sept 4pm - 7pm Mon - Sat.  
At other times please call on 01449 720491



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[www.box-bees.co.uk](http://www.box-bees.co.uk); email: [sales@box-bees.co.uk](mailto:sales@box-bees.co.uk)

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## Events<sup>2</sup>

Date	Speaker	Subject	Ten Minute Talk
7th February	Peter Langford, Master Beekeeper	Queen Rearing	AGM
6th March	John Days	Artificial Insemination of honey bees	Checking for Nosema. Barry Crabtree
3rd April	Peter Dalby	Swarm Control	The BBKA's Basic. Brett Baylis
12-14th April	BBKA SPRING CONVENTION Harper Adams University, Shropshire TF10 8NB		
12th May	WHERSTEAD APIARY OPENS EVERY SUNDAY AFTERNOON		

The image on the front page is from a visit to Wakehurst on their Glow Wild Winter Tour.

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<sup>2</sup> All at Kesgrave Scout Hut starting at 7:30pm