

F E B R U A R Y 2 0 2 0

# Am Hles



“The Swarm”

Newsletter of the West Cornwall Beekeepers' Association

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Visit our website: [www.wcbka.org.uk](http://www.wcbka.org.uk)

## Chair's Bit...

It would seem that January hasn't lasted very long! We have had a few glorious days and my bees have been rather busy as I expect most of yours have been.

I have been busy making some more equipment for both myself and Chy Vellan. I have made up some frames in anticipation of our foundation delivery. At the end of last year there seemed to be rather a lot of old rather disgusting foundation, so I think some shook swarms will be order of the day soon! I presume that everyone has done their varroa treatment. A couple of my hives had quite significant drops but mostly with very few varroa mites present thankfully.

The AHAT team have an assortment of training sessions to attend so hopefully we will have some more news on how to deal with those pesky hornets shortly.

Finally, I look forward to seeing you all at our annual get-together at Country Skittles and have the chance to show you just how pathetic I am at bowling! It's always a very friendly event with plenty of time for a chat with fellow beekeepers and lots of banter along with excellent food. Details below.

Happy beekeeping.

*Graham Caines*



“I think I'm a somewhat nervous bee who just wants to conform. Which, I guess, is common in bees”  
- **Matthew Broderick**

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## Save the Date!

**Monday 3<sup>rd</sup> February**  
Winter meeting – Grant McTaggart on honey-making

**Saturday 15<sup>th</sup> February**  
BIBBA Event

**Saturday 22<sup>nd</sup> February**  
Holsworthy Bee Convention

See the What's On page (9)  
for more events!

## News in Brief

### Membership Update

Currently our membership stands at 150 paid up Full and Associate Members including 6 new members – Welcome! The final chasing email has been sent to members from last year who have not yet re-joined and our secretary will remove them from the distribution lists this month.

Looking forward – I am delighted to announce that at the last Committee Meeting, the Committee agreed to work towards an easier and more effective method of member data collection and management. In the first instance we are reviewing what we currently do with regard to data capture and management and research is underway to determine what this might look like in the future and how better use of our existing electronic systems such as our web site and the BBKA eR2 data management system could be utilised. We will also look at the ways many of the other Area Associations and Branches collect member data – several have used electronic systems for years. The plan is to have our new system in place, tested and operational for the start of the next WCBKA year – 1<sup>st</sup> November 2020.

Phil Green, Membership Secretary

### Volunteering Opportunities

Why not get more involved by supporting West Cornwall Beekeepers Association through volunteering? It is good fun and we do seem to love talking about our bees. Every year we are invited to a range of events so that we can share our enthusiasm for bees with others, show the wider community what we do as beekeepers and inform them about the importance of bees as pollinators. All you need is a little bit of time to spare.

The events we are invited to include:

- The annual “Farm and Country Day” at the Royal Cornwall Showground in Wadebridge, which this year is on 25<sup>th</sup> and 26<sup>th</sup> March. About 750 school children aged 7-9 years come each day to get hands-on experience of farming and food production. The WCBKA and Cornwall Beekeepers do one day each.
- The Royal Cornwall Show (also at the Showground in Wadebridge) on 4-6th June, where our part of the Bee and Honey Section will have a theme of Winter.
- Kehelland Apple Day on Saturday 10th October (tbc) where we also do a lot of candle rolling with the children & sell Chy Vellan honey.
- Talks at other community groups or in schools.

If you are interested please contact Val by emailing her at: [wcbka.val@gmail.com](mailto:wcbka.val@gmail.com) or talk to one of the committee at the next winter meeting.

### Skittles Evening - Friday 28th February 8-9pm

Last year the skittles evening was good fun and so we have arranged this social evening again. We have booked it for the evening of Friday 28<sup>th</sup> February at Country Skittles near Hayle TR27 6ER. Just £3.50 per person, so why not come along with your family and friends. If you have not played before, skittles is similar to 10 pin bowling but is a more traditional way of knocking pins over. The lanes are shorter and there are only 9 pins to knock down and so in theory it should be easier! Food is not included and if you want to eat there you will need to pre-order direct with Country Skittles and be there for 6.30pm. Sample menus can be found at <http://www.countryskittles.com/food.ht>

The games start at 8pm. Pay on the night but if you are thinking of joining in please contact Val: [wcbka.val@gmail.com](mailto:wcbka.val@gmail.com) so that we make sure we have booked enough alleys.

# AHAT Update: February

2020 is galloping on. Spring being just around the corner we need to be mindful that as early as March, Asian hornet queens will be emerging from hibernation and will be feeding on nectar rich flowers.

We all have a difficult task – remaining focused on an invasive species, which, although it has appeared in the UK, including other parts of Cornwall has not been seen in WCBKA territory. That said, we must do what we can and continue to be vigilant together with encouraging others (not just beekeepers) to do the same. The WCBKA Asian Hornet Action Team (AHAT) is here to help with information and species identification. We have a supply of posters and information leaflets which are available at winter meetings or from a member of the AHAT team.

*Phil Green*

## South West Asian Hornet Action Team Training Day

Some of you may be aware that the Somerset Beekeepers' Association arranged a day of training and information in regard to the Asian hornet problem which was held near Bridgewater. It was an excellent day, being a very well organised, informative day. I would say that in excess of 100 people attended which shows the deep level of concern generally. There was a good range of speakers including our very own Pete Kennedy from University of Exeter. The chief coordinator of the Jersey Asian hornet action team, Alistair Christie, spoke at length about their efforts to control the never-ending flow of hornets on the island and the need to engage as many people as possible in the hunt for them. Fortunately there have been no honeybee colonies lost on Jersey as yet but there is no record of the effect that the hornets are having on other pollinating insects, which is even more worrying.

We were also treated to an excellent talk from Sarah Bunker, author of *The Asian Hornet Handbook*, widely acclaimed as being the ultimate handbook for information about this predator. This informative book is available in our library. There was a lot of information supplied about bait stations, various methods of trapping, who to notify in the event of sightings and assorted things that should not be done! There was also information about spring trapping of hornet queens, which is one of the best ways to reduce the hornet numbers. The next stage in this process is to search for primary nests and have them destroyed.

I do have a summary of the events of the day which I am prepared to email to anyone who is interested. Please do ask. Provisions have been made so that the area coordinators of the all our local AHAT teams can keep in touch with each other in the event of a sighting. Any warning of imminent danger is clearly very welcome as a coordinated effort is essential. There is a tremendous amount of work being done in an effort to find a way of controlling these hornets. Pete Kennedy is at the forefront of research and development into management and control, being currently involved with a project called 'Atlantic POSITIVE', in collaboration with several European countries. It's really worth a look. Let's hope the efforts of all of the various research projects succeed in finding new methods of controlling this invasive non-native insect.

*Graham Caines.*

# Chy Vellan Questionnaire Results

The Education Working Group would like to thank all those members who took the time to reply to our questionnaire before Christmas about attendance at our Chy Vellan apiary and their interest in education. Thanks also to Val for collating this information. It has helped us to appreciate the range of experience and interest in training and learning among our members.

Firstly, Monday remains the best day for most of those members who wish to come to Chy Vellan. Unfortunately, this will not be convenient for everyone, but as well as the main afternoon session, we will be willing to run a Monday evening session if there is a demand for this.

This year, reflecting the range of members' experience, we are planning to run structured programmes of training and learning for two groups, and we hope that this form will be popular with members. There will be demonstration of various techniques and manipulations appropriate to each group, Improvers, ie those who have done the Basic assessment or have reached that standard, and Novices, ie those who are working towards the Basic assessment standard. We will encourage the members of the Novices group to take the assessment and we very much hope that many will do so!

We know that members are unable to attend every session, so we will publicise in advance what we are doing when, so that members will be able to choose what they come to. The programme can be seen below although it is likely that the weather will mean some changes.

Another result of the questionnaire was that several members expressed a desire to be part of a winter study group and we now have 8 members studying module 1. This is really encouraging.

Thank you all again and we look forward to seeing lots of you at Chy Vellan during 2020.

*Anne, Lindsay, Kate and Jenny*

# Chy Vellan Programme

Date	Improvers. Post Basic Assessment	Novices Preparing for Basic Assessment
13 <sup>th</sup> April <b>Mondays</b>		
20 <sup>th</sup> April		
27 <sup>th</sup> April	1 <sup>st</sup> Spring inspection Apiary hygiene	1 <sup>st</sup> Spring inspection Apiary hygiene
4 <sup>th</sup> May	Disease Inspection	Spring cleaning Making up frames Hives/frames/bee space
11 <sup>th</sup> May	Bailey Comb Change, 1 <sup>st</sup> stage/ Shook Swarm	Disease inspection EFB, AFB. Notifiable diseases. Sample of 30 bees
18 <sup>th</sup> May	BCC, 2 <sup>nd</sup> stage/Swarm control with and without finding the Q	Swarm control with and without finding the Q
25 <sup>th</sup> May	BCC, 3 <sup>rd</sup> stage/Dealing with bad tempered colony	Hiving and managing a swarm
1 <sup>st</sup> June	Varroa monitoring/IPM	Varroa monitoring/IPM
8 <sup>th</sup> June	Making up nucs/their uses	Queenlessness Q intro/DLQ/LW
15 <sup>th</sup> June	Managing two brood boxes	Managing two brood boxes
22 <sup>nd</sup> June	Finding Q's/Marking and clipping drones	Finding Q/Marking and clipping drones
29 <sup>th</sup> June	Using a Demaree	TBH
6 <sup>th</sup> July	?Queen rearing	Syllabus for the Basic assessment/ revision
13 <sup>th</sup> July	?QR	Mock Basics
20 <sup>th</sup> July	?QR	?Basic assessments
27 <sup>th</sup> July	Methods of clearing bees/removing supers	Methods of clearing bees/removing supers
3 <sup>rd</sup> August		
10 <sup>th</sup> August	Disease inspection/varroa monitoring. LFD	Honey extraction session
17 <sup>th</sup> August	Uniting/ Feeding/robbing	Disease inspection/uniting
24 <sup>th</sup> August		Feeding/feeders/preparing for winter

Main session will be on Monday afternoons from 2pm, but there will also be a session on Monday evenings, 5.30-7.30 for those unable to attend in the afternoon.

See the WCBKA website for further details.

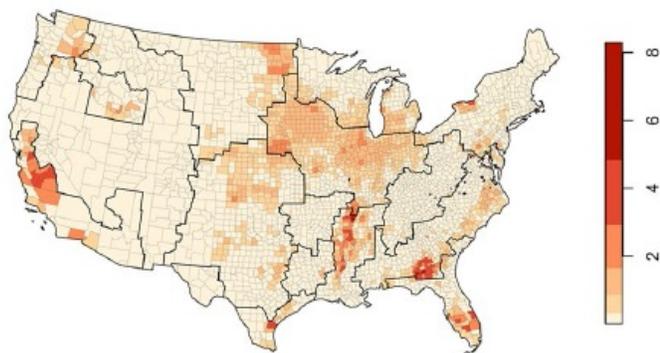
# From Pete Kennedy: Our Resident Science Correspondent

## The changing US insecticide landscape and the risk it poses to honeybees.

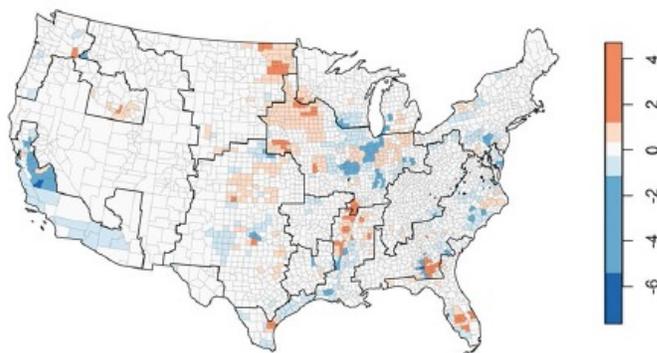
Margaret Douglas and fellow American co-workers looked at how insecticide usage in US farmland has changed between 1997 and 2012. They used public datasets to gather information on hectares of different crops grown, percentage treated, application rates and known lethal potency (LD<sub>50</sub> based on simple lab studies), to generate maps of bee toxic load (the hypothetical number of lethal doses applied to an area) and explore how these have changed over time. They looked at contact-(with treated surfaces e.g. leaves) and oral-based bee toxicity (through consumption of contaminated nectar, pollen or water) separately. While contact-based bee toxicity remained relatively steady over the 15 years, oral-based bee toxicity increased 9-fold, even though the insecticide application rate decreased over the same period. This is largely explained by a shift to more toxic insecticides used over a wider area. This change was not uniform across US farmland but was particularly evident in the American Mid West (121-fold increase) and Northern Great Plains (53-fold increase), in which corn and soybean production has become dominant. Neonicotinoids accounted for an overwhelming proportion of oral toxic load by 2012, especially in US corn and soybean production. It should be emphasised that the authors do not present empirical evidence for bee poisonings but present a risk map for potential areas of concern that should be monitored.

Douglas, et al. (2020). County-level analysis reveals a rapidly shifting landscape of insecticide hazard to honey bees (*Apis mellifera*) on US farmland. Scientific Reports 10:797. [doi.org/10.1038/s41598-019-57225-w](https://doi.org/10.1038/s41598-019-57225-w)

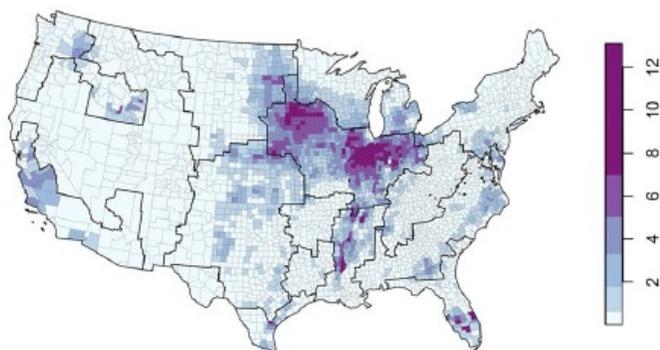
a Contact toxic load 2012 (bil bee LD50/ha)



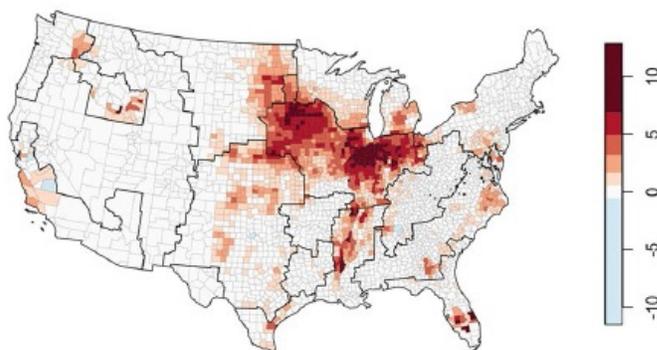
b Change in contact toxic load, 1997-2012 (bil bee LD50/ha)



c Oral toxic load 2012 (bil bee LD50/ha)



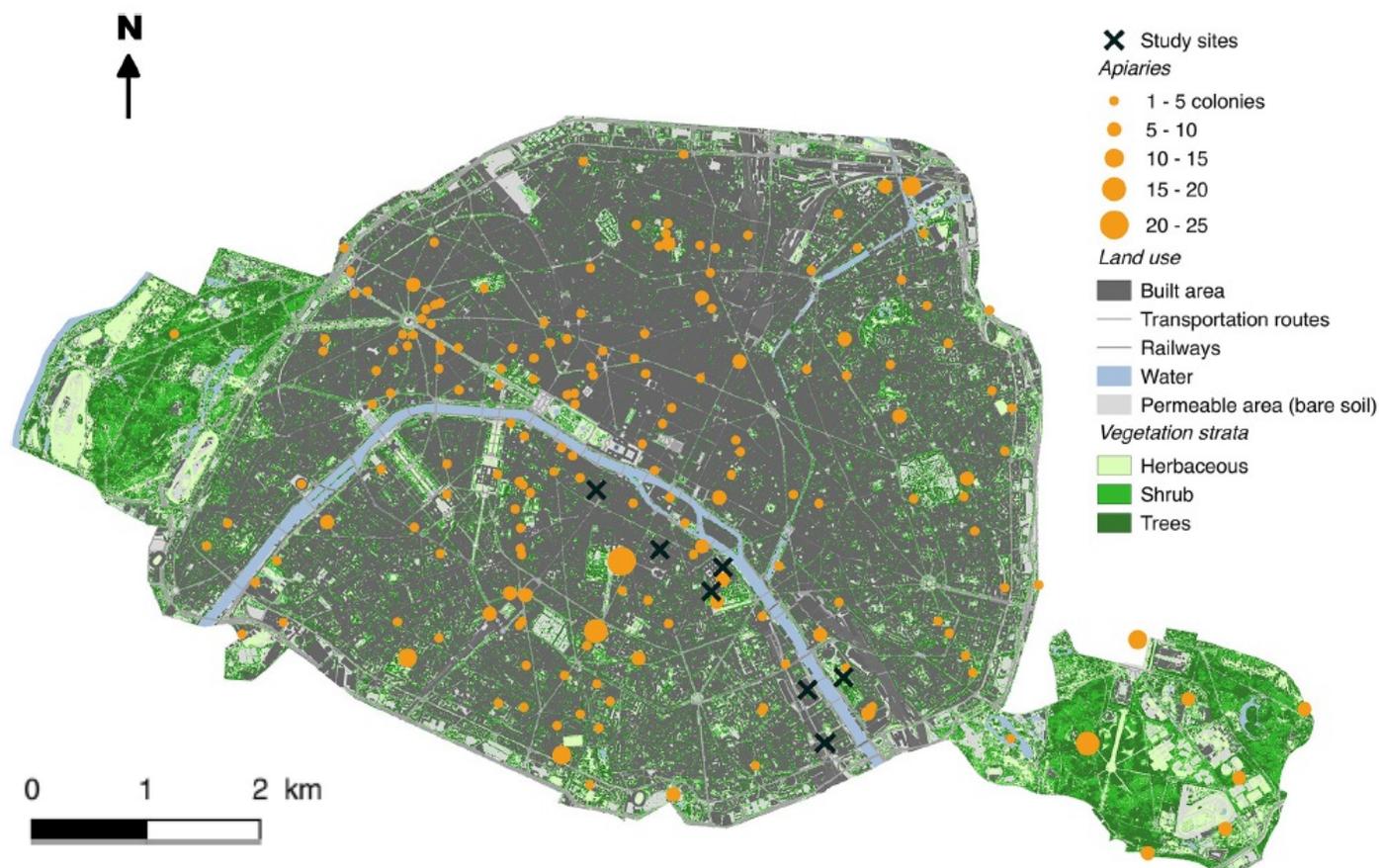
d Change in oral toxic load, 1997-2012 (bil bee LD50/ha)



## The relationship between wild pollinators and honeybees in Paris

The revised popularity of beekeeping, especially amongst city dwellers, with the intention of halting the decline in biodiversity and improving ecosystem well-being, is being questioned by a recent study from Paris. There, as in British cities, there has been a rapid rise of honeybee colonies e.g. on roof-tops, whether residential or commercial (the latter often linked with demonstrating green credentials). But cities are not devoid of wild pollinators, and so Lise Ropars and colleagues studied flower visitation over 3 years in 5-7 green spaces that differed in the number of honeybee colonies kept within 500m (0-28 colonies) and within 1000m (7-53 colonies) of these spaces. They found a negative correlation between the flower visitation rate of wild pollinators, especially large solitary bees, bumblebees and beetles, and honeybee colony densities and suggested that this supports the view that honeybees may outcompete wild pollinators in such urban environments. But, as the authors acknowledge, their study is only correlative. Correlations give no indication of cause or effect. Other explanations, unfortunately not explored by the authors, may also be plausible explanations, especially as the authors did not actually find any correlation between honeybee flower visitation and wild pollinator flower visitation ... which one might expect if the mechanism is food competition. Disease transmission from honeybee colonies to wild pollinators could also be an explanation. Or French beekeepers may just have preferred to use apiary sites in locations less favoured by wild pollinators (the authors did find honeybees more closely linked with managed ornamental flowers, while wild flowers received significantly more visits by wild pollinators). The impact of high densities of honeybees certainly cannot be dismissed as even London beekeepers note that their honey harvests are less than they used to be since the massive rise in popularity of urban beekeeping there.

Ropars et al. (2019). Pollinator activity negatively related to honey bee densities in urban context.. PLoS ONE 14(9): e0222316. [doi.org/10.1371/journal.pone.0222316](https://doi.org/10.1371/journal.pone.0222316)



## The economic cost of losing a bumblebee species from Argentinian apple orchards

Two pollination scientific greats (Marcelo Aizen and Lucas Garibaldi) collaborated on an intriguing and important study from Argentina. In an area of Argentina that is responsible for 85% of the country's apple production, the authors experimentally manipulated the presence of colonies of a native bumblebee species *Bombus pauloensis*. By manipulating the density of these bumblebees in half the studied orchards, while either excluding all pollinators, hand pollinating individual apple flowers, or allowing their pollination by insects, the authors examined the potential impact of losing a key native pollinator group on (a) crop yield, (b) pollination quality, and (c) farmers' profits. Their results showed that insect pollination increased fruit set by 13% over hand-pollination. Fruit set and number of fruits per apple tree was reduced by less than half where bumblebees were absent, even when honeybees were abundant. Consequently, a farmer's profits could be decreased 2.4-fold if lacking bumblebees.

Perez-Mendez et al. (2020). The economic cost of losing native pollinator species for orchard production. *Journal of Applied Ecology*. [doi.org/10.1111/1365-2664-13561](https://doi.org/10.1111/1365-2664-13561)

## Genetically engineered gut bacterium to deliver gene-silencing tool to control varroa and DWV

An exciting advance in efforts to control two foremost threats of the honeybee – varroa and viruses - was published today (31 January) in *Science*. The detail is difficult to explain but centres around how a DNA sequence (the genetic blue-print) of a gene, when activated, is read or transcribed into a message in the form of messenger RNA, that then travels to the ribosome where this coded message is translated into the production of a protein. Proteins are the building blocks of life and, e.g. in the form of enzymes, are involved in many molecular processes. But the process is slightly more complicated in that other molecules can become involved, capable of fine-tuning the message. For example, RNA interference (RNAi) is a naturally occurring way for a cell to selectively intercept and destroy messenger RNA before its message is delivered. In so doing, it can silence a message originating from a gene. Recognition of this natural process (aside from leading to a Nobel Prize in 2006) has led many scientists to explore potential disease treatments based on RNAi due its gene silencing ability. For example, Giles Budge and Alan Bowman have been exploring for some time whether RNAi could be used to turn off genes in varroa that are otherwise essential for its survival or reproduction. The difficulty has often been that RNAi is expensive to produce, difficult to administer and temporary in nature due its instability. But now Sean Leonard and colleagues from the University of Texas, Austin, have genetically engineered a honeybee gut bacterium to induce production of very specific RNAi. These can be targeted at either viruses in the honeybee or even varroa feeding on the honeybee, influencing survival or reproduction of these pathogens and pest. Working in the laboratory with small groups of honeybees, treatment was shown to kill varroa mites or suppress Deformed Wing Virus. As the gut bacteria continue to induce RNAi production, this offers to be a means of producing RNAi cheaply, administer it effectively and for its production to be quite stable. The bacterium selected is species-specific core-member of the honeybee gut microbiome but further work, to allay concerns of ethical issues such as gene escape, will need to be addressed. The laboratory study used only adult bees and further work will have to confirm the similarity of larval gut microbiota to adult honeybee gut microbiota, and to demonstrate the likelihood of protection being passed to larvae and subsequently pupae, in which varroa and viruses have the greatest impact. But RNAi can be extremely specific, yet viruses have high mutation rates, suggesting that a specific RNAi may become less effective over time. And more recent understanding of virus communities suggests that these interact with one another, raising the question how use of RNAi may influence the evolution of viruses within the honeybee when one virus (or even strain of virus) is knocked down. Sean Leonard's discovery is a major advance but a lot of further work is still needed to address these potential concerns.

Leonard et al. (2020). Engineered symbionts activate honey bee immunity and limit pathogens.. *Science* 367 (6477), 573-576. [doi.org/10.1126/science.aax9039](https://doi.org/10.1126/science.aax9039).

# What's On?

## Monday 3<sup>rd</sup> February 2020 - Winter Meeting

3<sup>rd</sup> February: Grant McTaggart – “**How to make creamed and soft set honey**”. Grant’s a Royal Cornwall Show winner for his soft set honey

## Saturday 15<sup>th</sup> February 2020 – Sustainable Beekeeping 2020

Organised by the B4 project see [www.bibba.com/event-list/](http://www.bibba.com/event-list/) for details. This year’s event takes place in Callington

## Monday 17<sup>th</sup> February 2020 - Better Beekeeping Meeting

Queenlessness, recognising and managing, procedures, uniting, which queen, drone-laying queens (DLQ) and laying workings (LW)

## Saturday 22<sup>nd</sup> February 2020 – Holsworthy Bee Convention

A full day of speakers with lunch included. Visit [www.holsworthybeekeepers.org.uk](http://www.holsworthybeekeepers.org.uk) for booking and details.

## Monday 2<sup>nd</sup> March 2020 - Winter Meeting

Natasha de Vere – “**Improving Forage for Bees**”. Natasha de Vere is from the National Botanic Garden of Wales and senior lecturer in Botany at the University of Aberystwyth. She has surveyed plants visited by honeybees (and other bees) nationally from samples submitted by beekeepers and is now working on green infrastructure to improve forage in the landscape for bees.

## Monday 16<sup>th</sup> March 2020 - Better Beekeeping Meeting

Managing weak colonies, comb changing & why, feeders and feeding

## Monday 6<sup>th</sup> April 2020 - Better Beekeeping Meeting

Nosema workshops, Asian hornet traps

## Tuesday 25<sup>th</sup> – Thursday 27<sup>th</sup> August 2020

The Royal Entomological Society's annual ENTO 2020 will be hosted by the University of Exeter Penryn Campus this year (25-27 August). Predominately focused at their RES members, but the theme is likely to be of interest: “Populations, pollinators, pathogens”. Speakers include Prof Geraldine Wright of University of Oxford on "Floral pollen: how bees use it to meet their nutritional needs".

The WCBKA’s **Winter Meetings** and **Better Beekeeping** sessions take place on Mondays at 7:30pm at Marazion Community Centre, Gwallon Lane, TR17 0HW. Tea & coffee are available and prizes for the raffle are always welcomed!