



The London Beekeepers' Association

LBKA News

February, 2015

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Welcome to February's newsletter! We've a lot of announcements this month including some interesting opportunities. As well as the usual excellent contributions from Richard, Howard, Mark and Cerys, Mark continues his epic and informative travelogue of his beekeeping-related experiences in the US, Emily reports on our January Winter Lecture, Vesko – one of our newest members – talks about his beekeeping experiences in his native Bulgaria, Callie gives us a round-up of what's been happening on our public Facebook page and Emily has been waxing lyrical.

Thanks to all this month's contributors: **Emily Abbot**, **Cerys Harrow**, **Richard Glassborow**, **Callie Nell**, **Howard Nichols**, **Mark Patterson**, **Emily Scott** (via her excellent blog) and **Vesko Starchikov**.

We're always looking for new and interesting contributions. Please contact me if you'd like to discuss writing an article.

Aidan Slingsby, services@lbka.org.uk

From our Chair

I apologise in advance, this is going to be a short letter from the chair as I have only just got back from holiday (as you know, winter is a good time for beekeepers to go on holiday).

Any day now the beekeeping season can pick up. Hopefully our colonies have survived the winter and will start to build up as soon as the weather warms up and the days lengthen. In the mean time, we do have to keep an eye on their supplies, this being a classic time for colony starvation. And, of course, we all have our new frames and clean hives ready don't we!

Some of you are aware that I attended the BBKA's annual delegates meeting (ADM) in January. This was a first for me and I have to say it took some getting my head around what was happening on the floor and behind the scenes. Parts of the meeting were decidedly bumpy. As well as reports from the various executive



A hardy geranium braves the January frosts. Photo: Mark Patterson.

committees there were 17 propositions from member associations. Not surprisingly, this left no room for debate on some of the more contentious issues. This is always a problem with annual meetings for any organisation.

One general underlying tension seemed to relate to “evidenced based” policy. I have some sympathy here as the LBKA committee is trying to develop evidence-based positions. Reliable evidence can be hard to come by and even when it is available it does not always comply with commonly held beliefs so how it is communicated can lead to contention so how it is handled is of major importance. As a result in this case I think there may be some conflict in some of the propositions passed over sensitive issues like neonicotinoids. That will be for the executive to sort out.

A full report on the day’s proceedings is not appropriate here but if any LBKA members would like to know specific details I am happy for them to contact me and I will do my best to answer. But please be patient, I have some 120 odd pages of documents and notes to consult.

However, there is one item I would like to share with you all now: The London Beekeeping Association was mentioned for its achievement in the number of passes of the Basic exam. Huge credit here goes to our education officer, Howard Nichols, as well of course to all the members who sat and passed the exam. Education and promotion of best practice in beekeeping is a significant object of our association, so well done all of you. I do recommend all the new beekeepers and mentees currently with us to take up this opportunity this year.

While on the subject of education and best practice, I would also like to remind members about the monthly meetings. These are always tuned to what’s going on in the beekeeping year and they provide a very useful forum for exchanges between beekeepers of all experience as well as that essential of beekeeping – a support network. Whether you are new to beekeeping or have been keeping for years, please do come along – usually, the second Sunday of the month, details on the website.

Announcements

Winter Lecture: “Picky Pollinators”

LBKA's second Winter Lecture will be on **Wednesday 11th February at Roots and Shoots** (Walnut Tree Walk, SE11 6DN) at **19:00 for 19:30**. It will be titled **LBKA Winter Lecture on Picky Pollinators: Can**

bees learn which flowers offer the most nutritious pollen?

This promises to be a fascinating talk by **Beth Nicholls** from the **University of Sussex** on the subject of the PhD she completed some years ago. All are welcome, but priority will be given to LBKA members. Please email admin@lbka.org.uk if you'd like to come. The abstract follows.

“Bees are known to learn the features (e.g. fragrance, petal colour, shape) of flowers producing the sweetest or largest volume of nectar, and prefer to visit such highly-rewarding flowers over other, less-rewarding flowers that might be available in the same area. However, bees also forage for pollen as a source of protein, though what they learn when collecting pollen from flowers has been little explored. The pollen of different plant species varies considerably in terms of the nutrients it offers for brood development, and there is some evidence to suggest that foraging bees favour plant species which produce more nutritious, higher quality pollen. Nectar quality can be easily evaluated by ‘taste’, but since bees do not consume pollen during collection, how they might evaluate the pollen produced by different flowers is not well understood. Here I will describe a series of experiments designed to test firstly whether bees can learn to associate pollen rewards with flower features such as petal colour, as has been shown for nectar, and secondly whether bees can learn that some flowers provide more nutritious pollen than others. These experiments are interesting not only in furthering our understanding of how bees make sure that only the best quality food is returned to the colony, the results may also shed light on the role that insect learning might have played in shaping relationships between plants and their pollinators”.

March's Monthly Meeting: Microscopy for Nosema and Acarine testing

As last year, at March's monthly we'll get out the microscopes and look for signs of Nosema and Acarine in bees. This will be on **8th March at 11:00 at Fairley House Junior School (SE1 7JY)**. We'd encourage you to bring your own sample of bees, so you can test them for disease. If you wish to do this, please bring around 30 freshly dead bees. Collect bees the day before by blocking the entrance and scraping them off the hive front or holding an open polythene bag in front of the entrance as they return. It's important to get flying bees. Kill them humanely by putting them in the freezer overnight.

BBKA Spring Convention

The **BBKA Spring Convention at Harper Adams University, Newport, Shropshire** is the major event in the beekeeping calendar and probably Europe's biggest national beekeeping event. With more than 30 lectures from international and leading UK speakers and well



BBKA Spring Convention

over 40 workshops and courses during the 3 day event, there is something for everyone, expert, improver, beginner and non-beekeeper

Entry tickets (wrist-bands) can be purchased from the BBKA shop and you can book workshops & courses, accommodation and meals by clicking on the "Book Events & Services link" on the Spring Convention page at http://www.bbka.org.uk/news_and_events/spring_convention.php.

Bees for members

*Paul Vagg
resources@lbka.org.uk*

Any member requiring to be placed on the **nuc waiting list** can contact me on the nucs/swarm number 07903018351 or by email. The cost of nucs is **£140 with a £40 deposit** for the nuc box which is returnable if the box is returned clean.

Members must hold Bee Basic, be vouched for by their mentor, or have kept their own colonies for at least a year. There are a limited number of nucs available, so priority will be given to those members who have finished their mentoring year, and have no colonies, or those that have suffered winter losses.

Members that have overwintered nucs that are up to BBKA standard that they wish to sell, can also contact me on 07903018351 or by email to register what they have for sale.

Swarms

BBKA's swarm collectors' list. BBKA publish the names and phone numbers of local beekeepers willing to collect swarms and members of the public would contact you directly. Is there anyone with enough experience would like to be on it?

LBKA's swarm collectors' list. Separately from BBKA's list is our own swarm list. Barbara Linder has kindly agreed to coordinate LBKA's response to swarms. She will man LBKA's swarm line and will distribute the work between members on our swarm list. The advantage of being on this list instead of LBKA's is that your phone number will not be published and Barbara will be an effective "filtering layer" between you and members of the public, many of whom cannot tell the difference between honey bees, bumble bees and wasps.

Learning to collect swarms. Finally, if you'd like to learn to collect swarms, we can call you when one of our



Bees for Development's Ethiopia project; <http://www.beesfordevelopment.org/what-we-do/international-projects/ethiopia>

swarm collectors local to you goes to collect a swarm. This is the best and safest way to learn.

Anyone interested in any of the above should contact Emma on admin@lbka.org.uk.

Want to help with our outreach?

Would you like to help with outreach? We regularly get requests to give interviews, write articles or give talks and are looking for members who might help with that. We will organise information sessions to help with this – no obligation! If you're interested, please email me at services@lbka.org.uk.

Neal's Yard Remedies donation

We would like to thank **Neal's Yard Remedies** for generously donating £500 to help fund our forage and education programme. Thank you Mark for helping make this happen.

Thanks from BfD

Bees for Development sent us a message to thank us for our £1000 donation.

"Thank you very much for your generous donation to Bees for Development for £1000. Please convey our thanks to everyone at the London Beekeepers' Association for their support.

Your donation will be used to help fund our

'Bees and People' project in Ethiopia where we have established a beekeeping Centre in Amhara. The centre has already been a huge success-raising annual incomes by an average of 42% in its first year.

We see the incredible power of small-budget interventions that help lift people out of poverty in sustainable ways. Our work would not be possible without the ongoing support of associations like yours, so thank you."

Mead-making visit

Member Ann Eatwell is organising a **visit to a young sparkling mead maker** in Peckham. She already has about three people interested thinks that there would be space for another ten people, a first some first served basis. If you're interested, please contact Ann on ann.eatwell@yahoo.co.uk.

Offer of an Apiary in Putney by Nando's

Nando's approached us because they are interested to get involved with programmes that help bees. Several of their staff will attend our Spring training course and they will also sponsor an LBKA forage planting event planned for mid-March at one of our training apiaries – more news in due course – and we hope this will become the first of many planting events involving them.

There also offering offering LBKA members several of its premises to host hives.

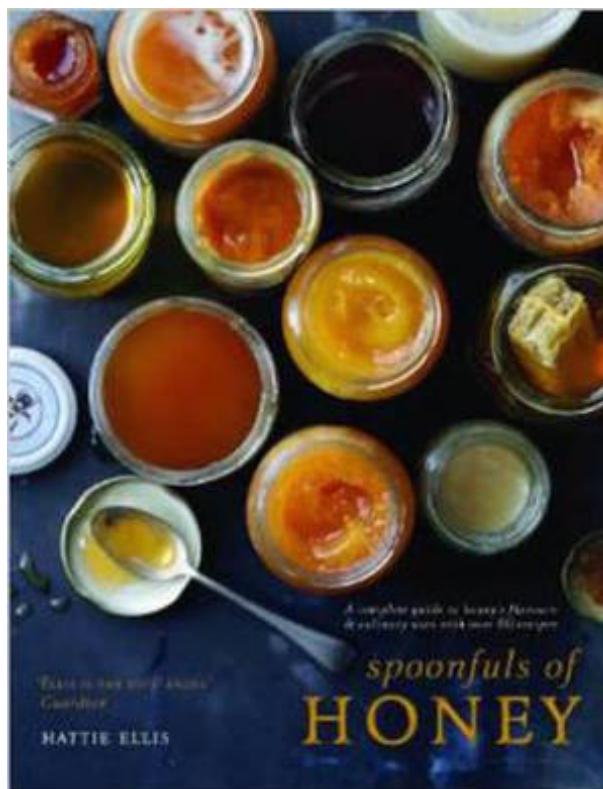
For now, they are offering us a **2nd floor roof terrace** at the company's UK headquarters in Putney. The roof terrace is small and the space and layout will be somewhat restrictive, therefore will require an experienced and organised beekeeper. LBKA has undertaken a risk assessment of the site and we deem it suitable as long as the keeper has Bee Basic and agrees to a few house keeping rules of the site. There is space for 2 colonies only.

Additional sites may become available to offer later on pending further investigations and risk assessments.

We will provide an introduction to the site and the Nando's management to the person taking on the site. If you are interested please contact Mark on forage@lbka.org.uk outlining your interest. Nando's are keen to have **bees on site by end of March**.

Potential apiary site: SW11

We have been offered another place for one of our members to keep bees in SW11. We have not checked out the site and therefore don't know how suitable it is. If anyone is interested in taking a look, please contact services@lbka.org.uk. We can advise and help with



Spoonfuls of Honey - want to review?

assessing the site and doing a risk assessment if you wish.

We would be looking for someone whose at least kept colonies for a few years already and preferably has Bee Basic.

Requests for hive products

We often get queries from members of the public for hive products. Here are some of this month's. Please contact services@lbka.org.uk if you think you might be able to help.

Wax: Someone is looking for wax to lining cake/bread tins.

Honey for mead: Someone is looking for about 15lb of honey to make mead with. He's looking for local honey that he can buy cheaply and in bulk and doesn't mind if it's old honey and/or whether it's crystallised.

Stepney City Farm still looking for more honey

Stepney City Farm are still looking for more London Honey to sell in their farm shop. If you've got jars to spare and would like to sell them to them, please contact services@lbka.org.uk.

Book review

Would anyone like to review *Spoonfuls of Honey*? You would get a review copy and your review would be pub-



Some of Lynda Laird's photographs

lished in this newsletter. If you're interested, please contact Aidan at services@lbka.org.uk.

Do you want to help start a beekeeping club at a school?

Does anyone want to help a keen 17-year old school pupil set up a beekeeping club at his school in Barnes?

He has couple of years beekeeping experience but the school would like a more experienced beekeepers to help out at the start. They plan to send people to do our course and anticipate that the "club" will be able to sustain itself in a couple of years.

- talk to teachers and students about beekeeping, risks, etc and to help pick a suitable site at the school.
- provide occasional help and support (he already experience)

It's a nice initiative for the school/pupil and should be a nice and fun thing to do for anyone local.

Email services@lbka.org.uk if you're interested and feel that you'd be competent helping in this way. Of course, there would be no obligation at first and it would depend on your assessment of the site's suitability. LBKA can help with risk assessments if you like.

Pop-up exhibition on urban beekeeping

Maria Howard from The Telegram Gallery has invited LBKA members to the free **Urban Beekeeping photography** private view and exhibition. More details are available from <http://www.telegramgallery.com/lynda-laird/>.

Contaminated honey

Dr David Aston (Chair BBKA Technical and Environmental Committee) has asked us to tell them about any cases of honey contamination with sugar and other residues. If you know of any you'd like to pass on, please contact Emma on admin@lbka.org.uk.

At the 2015 ADM the Executive agreed to determine the regulatory agency responsible for the prevention of the contamination of honey with sugar and other residues and to seek ways in which such contamination could be stopped.

Initial contacts made with the Environment Agency resulted in a request from them for more information and examples of such contamination.

I would be very grateful if you would circulate this request to your members.

Please could you inform me about any such occurrences which have happened to you and/or your members.

Would you like to pose for Buzzfeed?

Buzzfeed (<http://www.buzzfeed.com/>) are doing an article about unusual hobbies and they've ask if any of our members wants to be photographed for the article.

The person would need to pose in their normal every day clothes and then pose again wearing their bee keeper outfit. They would send a photographer around and the whole thing (including setting up the camera and lights) would take no more than 2 hours.

They want to do this 26th February to 1st March. Please email admin@lbka.org.uk if you're interested.

January's Monthly Meeting

Cerys' regular update of what happened at last months' meeting.

Cerys Harrow
LBKA member

Do you know your diseases?

If it's January and far too cold to be opening up your hives, then it's time for Howard's fiendish bee diseases quiz. There were twenty slides showing frames of bees in different types of distress and disease for us to identify. Even if you have done it before or think you know your stuff it is surprisingly difficult to get them all right and some generated interesting discussion. (Reassuringly for beginners by the way, you just fill in and mark your own sheet so no one need know even if you get them all wrong.) However, the important point of the quiz, as Howard kept emphasising, is to be able to recognise healthy brood and to be aware when something is wrong even if you don't know exactly what it is. You can then ask for help or advice from more experienced beekeepers in working out what the problem is or what to do about it.

After the challenge of the quiz, came the reward of hot drinks and some lovely cakes. This month there were also some interesting honeys to taste provided by some new members newly arrived in London from Bulgaria. It is always good to meet new members at the monthly meeting whether you come from just down the road or from another country, and whether you are new to London or new to beekeeping. So please do come along.

February in the Apiary

Howard's regular piece on what we should be doing in the apiary.

*Howard Nichols
education@lbka.org.uk*

Where should we be with our colonies at this time of year

February is a time of increasing activity for bees. Although cold, bleak and rainy on the outside, and, to all appearances, it appears to be very quiet on the inside, a lot is happening inside the cluster. The main job of the beekeeper is to keep an eye on stores. Bee colonies are more likely to die out in February to early spring due to starvation, not due to the cold.

The queen will now be laying at an increasing rate. The empty cells inside the cluster will have been prepared by the workers and eggs are now being laid. The temperature of a broodless cluster is maintained at 20°C but a cluster with brood requires a 35°C temperature. This

also consumes more stores and it is this time of year that stores start to be depleted at a faster rate.

If feeding is necessary then fondant is probably still the best bet. If, on a warm day, the bees are flying and emergency stores are required then feeding liquid stores is a possibility. Bees carry and metabolise nectar at 50% concentration. 1kg of sugar dissolved in 1 litre of water will give this concentration and so involve the bees in the minimum amount of work. If stores are not required then it is better not to feed liquid syrup so not to cause any disturbance.

On a warm February to early March day the bees will fly for forage. Sources in February include snowdrops, crocus and early flowering hazel. The latter is a godsend when it flowers as it provides an abundance of pollen. If your bees have been foraging hazel then they will be coming back to the hive drenched in surplus bright yellow pollen. All these sources provide pollen only. Not nectar.

Late February to early March is a challenging time for bees. The winter bees are old but now need to work at an increasing rate to feed larvae and young bees. Many of these older bees will be dying off and a disproportionate number will die in the hive. It is not unusual to find a large quantity of dead bees in front of the hive or behind the mouseguard. Just lift the mouseguard and brush out. This should not normally be cause for concern and does not mean that the colony is dying out. If you keep your hive on a concrete or stone floor then the quantity of dead bees may appear to be substantial. If kept on grass then there may well be just as many dead bees but they will appear substantially less.

Other jobs to do:

- Have an outline plan for the forthcoming season.
 Have a strategy to develop or improve a particular beekeeping skill.
- Assemble frames and ensure you have sufficient equipment for the season.
- Do not forget the LBKA monthly meetings and the mid-week winter lecture series.
- Decide to take the BBKA Basic Assessment this May and register with the LBKA to do this. Our BBKA Basic revision course will commence in March (dates not yet decided).



Mahonia



Winter aconite



Snow drop

February in the Forage Patch

Mark's regular update on what's in flower that's good for bees.

Mark Patterson
forage@lbka.org.uk

February is a cold month of the year when forage is usually still sparse. Last winter was exceptionally mild and many flowers made a very early appearance giving our bees an early start to what became a very successful season. Botanists across the country were stunned to find 368 species in bloom this time last year compared with the usual 20-30 species which is typical for our climate and the time of year.

How spring 2015 will pan out remains to be seen but until recently the winter has again been very mild and many of my summer flowering plants have continued to bloom well beyond Christmas. At time of writing there is much talk about a severe cold snap hitting us as the sub-Arctic jet stream oscillates and looks to be bringing very cold weather our way. If the cold weather does arrive any flowers tricked into flowering by the mild weather could find themselves frosted off. For perennials this is not so bad as most can put on a second flush of blooms but for spring bulbs and fruit trees it could spell disaster.

Even if the extreme cold weather does arrive there are a few good sources of forage which can tolerate the cold. Hazel catkins should now be emerging, hellebores will be in flower as will viburnums. Most of the Mahonia's will now be going over and as their blooms disappear from our green spaces they will be replaced by early emerging bulbs such as snow drop, aconite and early crocus. Wall flowers are often visited by bees and they should be starting to flower soon too. The perennial or everlasting varieties often flower all through the winter. In wild or undisturbed areas, lesser celandine and sweet violets may be in flower.

Things to do the garden:

- **Plant trees and shrubs.** Now is the ideal time to plant fruit trees, soft fruits and other shrubs whilst they are not yet actively growing and whilst the soil is moist.
- **Lay hedges.** If you have a native hedge then now is the best time to lay it after the birds have picked the shrubs of their berries.
- **Mulch boarders.** Mulching your flower borders now will help prevent them drying out come summer time. Use well rotted manure, composted leaves or bark chips.

- Plan ahead.** If you haven't done so yet plan your garden for the year ahead and order your seeds or mail delivered baby plants. LBKA members can take advantage of discounts with several suppliers which are listed on the website.

Mark's Beekeeping Travels in the US (Part 3)

Instalment 3 in Mark's epic travelogue of his recent US beekeeping experiences. This month, he focuses on Small Hive Beetle and other honey bee pests.

Mark Patterson
forage@lbka.org.uk

Firstly lets start with wasps

Beekeepers in America like those the world over have a hateful relationship with wasps.

Here in the UK we have about half a dozen species of wasp which can pose problems for our bee colonies. These are mostly social wasps which build paper nests but there is also one solitary wasp – the Bee Wolf *Phylanthus* – which hunts almost exclusively on honey bee workers which it buries underground and lays its eggs on after paralysing the bee. Most of these wasps are little more than a nuisance, few can actually cause any real damage, and when they do it is usually already weak colonies which are effected. Reducing hive entrances to make the colony easier for the guard bees to defend is usually all the intervention needed.

In the US they have a whole different range of native wasps which predate bees as well as common Wasp, German Wasp, Tree Wasp and European Hornets which have been accidentally introduced from Europe. In total they have around 20 species of social wasps which all, to some degree prey, on honey bee colonies. Honey Bees are not native to North America so have few defences against the native wasps which must have delighted at their arrival in the 1600s.

Among the most common social wasps which can cause problems for US beekeepers are the Yellow Jackets. These are very similar to European common wasps which are the scourge of picnic tables in late summer and sometimes rob our honey bees. Yellow Jackets almost always nest underground among thick undergrowth. In 2013, I was the victim of a vicious Yellow Jacket colony which went on the rampage after an innocent bystander accidentally stepped on their nest



Bald Faced Hornet that we squashed as it attacked a hive

during an event in Piedmont Park in Atlanta. 100s of wasps came pouring out of a small hole in the ground – probably an old mouse burrow and flew straight up my shorts stinging my groin. My friends were stung on the face, arms and legs. The stings were extremely painful and burned intensely. They were far more painful than any bee sting and I would not want to experience it again.

There are several species of Yellow Jacket which all look very similar. They are the Eastern Yellow Jacket, Western Yellow Jacket, Prairie Yellow Jacket and the Southern Yellow Jacket. All the Yellow Jackets are in the genus *Vespa* which is the same Genus that our common wasps and European Hornets belong to.

In the genus *Dolichovespula* is the bald faced Hornet. This social wasp is a bit larger than our common wasps but not as big as our hornets. They are a black and white pied patterned wasps – they are actually quite pretty.

Like common wasps and hornets they are opportunistic raiders of honey bee colonies in late summer. An introduced European relative of the Bald Faced Hornet is the European Tree Wasp. These are also quite common in the US. Despite being called tree wasps they often nest underground. Tree wasps are the typical waspy black and yellow.

European hornets are a real problems for beekeepers in some parts of the US where they have naturalised. They have no natural predators in the US and appear to behave differently to hornets here in Europe. Perhaps their presence in an alien ecosystem where they have no natural predators has caused them to develop a more aggressive temperament and adopt different predatory strategies than their European counterparts? The beekeepers I met certainly had respect for them. From my experience European Hornets are usually quite mellow towards humans and don't deserve their fearsome reputation.

There are a number of other social wasps known as paper wasps. These are similar to the before covered social wasps and like them build paper machete like



Paper Wasp.

nests but their colonies are sometimes structured differently. Rather than rearing a Queen caste some build nests where all the female workers in the colony can become the queen if they can dominate their sisters and suppress their desire to lay. Over the course of the year several members of the colony may have a turn at being the queen if they can manage to bully their way to the top and become the egg layer. These are large wasps and fearsome hunters. They make our European hornets look diminutive. Fortunately they seldom attack honey bee hives and are content preying on caterpillars. I saw allot of these large wasps around an apiary in Atlanta and they were very fearsome looking. They belong to the genus *Polistes*.

Large Mammals

Other more unusual pests of the Honey Bee in North America include several species of large mammal. Here in Europe, very few beekeepers have Brown Bears to content with, and throughout most of Europe the most serious mammalian pests are probably badgers and martins. In the Northern United States Black Bears are still very common and pose a real nuisance to beekeepers in rural areas. When I visited an apiary in the Appalachian Mountains I saw first-hand the damage that Black Bears can cause to hives. The brood bodies were deeply scratched and hives regularly toppled over spilling their suppers. The beekeeper had to create a concrete base with a series of bolts set into the concrete. Attached to these bolts was the hive via a series of ratchet straps. This prevents the bears from easily knocking the hive over, but if determined they can claw their way in.

Polystyrene hives are seldom used in rural areas in the US because they are simply too easy for mammals to break into. The most effective method at keeping the bears at bay was to keep a large dog nearby. Bears are wary of the dogs barking and tend to stay away. One keeper I met even had a solar powered electric fence – it gave me quite a shock when I accidentally leaned against it so I imagine it would give most bears cause for concern too.

Other mammalian pests include racoons, skunks, armadillo, possums, martins and in the far North, martins and Grizzly Bears.

American Foul Brood

Foul brood outbreaks are far more common in the US than here in Europe. This is largely due to the fact that there is no national program to eradicate it. AFB is not a notifiable disease in the US, there are no requirements to notify the authorities, quarantine the apiary or restrict movement of colonies and keepers are quite easily able to acquire antibiotics to treat their colonies. Whilst this relieves the symptoms of the outbreak on the colony it does not eradicate the pathogen from the environment completely so the bees are free to pass it on to other colonies as they drift and rob one another.

Many beekeepers I met blame feral colonies as reservoirs for AFB but in practice I think a lot of cases are probably the cause of the beekeeper failing to implement strict enough standards of apiary hygiene and failing to clean away spilled honey or dispose of comb safely. I was horrified at a lecture I attended to hear a highly regarded beekeeper in one state speak of their joy at watching all the bees in her yard flock to her garden table to rob the old combs she leaves out for them to clean so that she can harvest the wax! In my apiary any bits of comb removed from the hive are placed immediately in a plastic container with a lid or wrapped in a plastic bag until they are to be disposed of or melted down and cleaned for use later on.

Other pathogens like Nosema, chalk brood etc are also present in the US and are probably no more common than they are here in the UK.

One thing effecting the bees in the US that we do not have here in the UK is CCD or Colony Collapse Disorder. This is a condition where entire colonies disappear overnight leaving behind only the queen and a handful of nurse bees. Basically all the flying bees vanish in a very short space of time. There are many theories as to what causes it but pesticide exposure is widely believed to be one of the factors. There has been some research which shows that bees subjected to sub lethal doses of some pesticides exhibit weakened sense of orientation and can't navigate as easily. Some beekeepers think their poisoned bees are leaving in the morning and become lost and simply can't make it back to the hive. I don't have any research to back up my suspicions but I am willing to bet that migratory beekeeping practices and lack of diversity in the bee's diets is one contributing factor to CCD in the US. Researchers at George Washington State University recently found that bees which have access to a wider variety of pollen sources were healthier than colonies with poor diet and that the better fed bees were more tolerant and able to cope with environmental stresses such as pesticide exposure. It's obvious to me where the problem lies but



Adult Small Hive Beetle.

US commercial Beekeepers still seem to be scratching their heads unable to figure it out.

Varroa

Beekeepers in the US just like us here in the UK have varroa to contend with. Like us many keepers in the US have switched to open mesh floors to help combat varroa, they also use thymol treatments and a growing number are using Oxalic Acid as a winter treatment despite it not being an approved treatment method in the US. There is talk of Oxalic Acid being 'fast tracked' to approval to encourage more keepers to use it to reduce varroa load on their bees.

Varroa is particularly bad for beekeepers and their bees in the southern states where the climate is warm and sub tropical meaning there is seldom a break in the brood cycle of the colony. With brood present in the colony all year round there is no break in the varroa breeding cycle so infestations can build up quickly. In the far north where freezing temperatures can last for many months a long break in the bees brood cycle helps reduce varroa build up.

Several keepers I met on my travels spoke about a new hygienic strain of bee known as ankle biters. These bees are derived from a blood line which have developed an unusual behavioural defence against the mites. The bees are said to bite the mites and chew their legs off with their mandibles which immobilises the mite and prevents them from clinging on to their hosts. Immobile and unable to feed the mites quickly die. There was an atmosphere of hope among the beekeepers who spoke of these bees and that they may offer a new method of combating the mite.

Small Hive beetle

Small Hive Beetle originate in tropical Africa and are a pest of the native Honey bee *Apis mellifera scutellata*. In their native host the beetles pose little threat as the African bees have regular long gaps in their brood nest, swarm frequently and are more aggressive than Euro-

pean Honey Bees. This enables them to better defend themselves against the beetles. The beetles themselves are also restricted by the changes between the hot and wet seasons in Tropical Africa. Beetle larva require moist soil in which to pupate and for much of the year the soil will be baked dry and impenetrable to burrowing beetles. This restricts their ability to multiply rapidly so they rarely become a serious pest to the colony. Outside of their native Africa the beetle can exploit ideal breeding conditions and become a serious honey bee pest.

Small Hive Beetle first Arrived in the US in Florida state in 1998 and early detection failed to contain the initial outbreak. Within a very short time after their initial discovery the beetles had spread to countless surrounding apiaries and within 2 years had infected 20,000+ colonies across the state. Today they are found in 30 states across the US and are serious pest particularly in the southern states where the long hot summers and humid climate create ideal breeding conditions for them. Further north they are less of a problem and more of a honey super storage issue similar to wax moth.

The beetles are highly mobile and adults can fly many miles to locate new colonies to parasitise. The adult beetles enter the hives at night (they avoid daylight) and help themselves to stores of honey. They lay their eggs in the comb cells which the bees try to clear up and remove. The bees will respond aggressively to the presence of beetles in the brood nest and will coral the beetles away from the brood areas. Although the bees are unable to sting the beetles through their protective armour nor are the bees able to grip the beetles to carry them away, their harassment of the beetles does discourage the beetles away from the centre of the colony and can usually confine them to the outside reaches of the nest. This is the outermost frames and corner of the brood box. The beetles will gather in the corners of the brood body and in hives with open mesh floors will be found in the corners just beneath the crown board where it is dark. Another response by the bees to the presence of these invaders is the increased use of propolis. The bees will attempt to contain beetles in corners of the hive and seal them in with propolis. They will also fill any gaps in the hive woodwork where beetles may attempt to hide their eggs.

Female beetles can lay up to 2000 eggs in her 3-4 month life time and each developing larva once hatched will burrow through the comb attacking bee larva and devouring honey and pollen stores. Stores they don't eat are usually left soiled and quickly ferment and go sour. When fully grown the larva then migrate en-mass and leave the hive to burrow in moist earth where they will pupate. Time from egg to adult beetle varies and can be as little as 3 weeks or several times longer than this depending upon the temperatures. Large infestations can devastate a colony and the combs become 'slimed' by the messy larva. Temperatures are important to the beetles as outside the warmth of the honey bee colony the larva require warm conditions to quickly pupate in



Frames slimed by beetle larvae.

the soil. They cannot survive freezing temperatures in any life stage or form therefore in the far north only small numbers of beetles able to penetrate the winter cluster will survive.

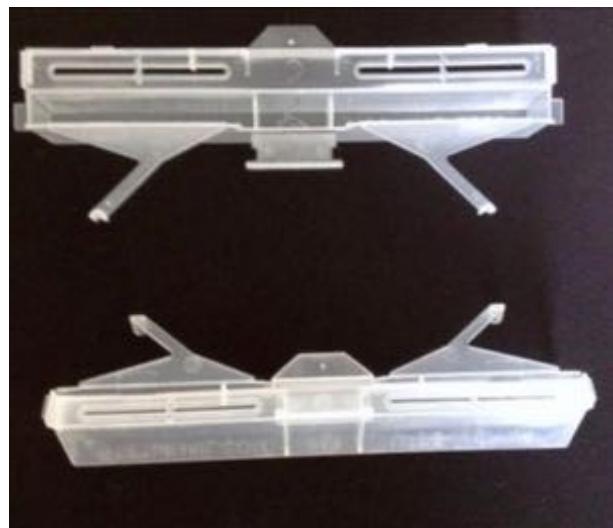
Whilst they are an unwelcome guest in the hive and real thorn in the side of the beekeeper they are far from the nail in the coffin which they were initially seen as. Keepers in the US have had almost 20 years to develop strategies to cope with the beetles and have come up with a variety of integrated management techniques which if applied correctly are effective at keeping their number in check. Like varroa they are impossible to eradicate complete but can be managed and kept to a low population threshold allowing the bees to cope with their presence.

Control methods:

- **Pesticide soil soaks.** Chemicals are available which when mixed with water and applied to the soil at night are very effective at killing pupating beetle larva in the earth. Unfortunately the poison is also detrimental to most soil life leaving the ground void of beneficial soil fauna.
- **Smash technique.** This is a crude but highly satisfactory method of killing hive beetle – aim and splatter with the flat end of your hive tool!
- **Blow torch technique.** Some beekeepers will gently shake frames over the upturned hive lid. The nurse bees will cling to the frame but the beetles will mostly fall off and land in the up turned lid. You can then take your blow torch to them. Again allot of satisfaction can be gained from this crude method.
- **The use of treatment strips and poison bait traps.** These are baited corex board strips or plastic traps placed inside the hive usually suspended between the frames or on the hive floor or laid across the top bars. The beetles will enter the traps or the recesses on the corex strips and come into contact with an insecticide which then kills them. Death is not instantaneous though and



Small Hive Beetle traps



Beetle jail trap

there is concern among many beekeepers that the chemicals used could harm the bees therefore they are ales popular option.

- **Beetle jail traps.** These are the best beetle traps I've seen so far. Slot the traps in the seam between the 2 outer most frames in the hive using the hook attachments over one of the top bars. The traps contain 2 compartments fitted with a gate which can be filled with a little vegetable cooking oil. There is then a small bait compartment. Usually a piece of rotting fruit, some dead beetles or apple cider vinegar is used as bait. When the beetles enter the traps they fall into the vegetable oil and quickly drown. Every so often the keeper empties the traps and recharges with fresh vegetable oil. The traps themselves are inexpensive, dishwasher safe and re-usable making them a very economical option.
- **Beetle Baffle.** This ingenuous invention is very simple but highly effective. The baffle is a series of thin metal strips which is fitted to the lower inside edge of the brood body directly where the brood body touches the hive floor. The baffle acts as a physical barrier which the cumbersome beetles



Beetle baffles

cannot climb over and physically prevents them from climbing the walls of the hive an accessing the brood nest. Used in combination with the beetle jail traps they make managing beetle numbers very easy.

There is a great deal of worry and concern about the recent arrival of Small Hive Beetle in Europe but I think armed with the 20 years of experience the Americans have had with combating this pest we have no excuse for not being prepared for their eventual arrival in our apiaries and rather than solely focussing on early warning and containment the authorities here should be investing more into educating keepers how to cope with them once they arrive.

The Bulgarian Beekeeper

This is the first of a month-by-month series of new LBKA member Vesko's experiences of beekeeping back in his native Bulgaria. It should provide an interesting comparison how things are here.

Vesko Starchikov
LBKA member

January

I've been a beekeeper since 1987, starting with one hive and eventually having eleven. They are located on the foot of the Balkan Mountains – one of the largest mountains in Bulgaria – near the town of Kalofer. The apiary is sunlit from morning to late afternoon and is protected from the cold north winds in winter.

The apiary has various flowering plants, trees, shrubs and many herbaceous plants. Nearby there is a stream which supplies bees with fresh water. Honey is made from nectar from acacia, lime, polyphlore (meadow), honey dew and other mixed sources.

January is a typical winter month in Bulgaria, with low temperatures, heavy snowfalls and icy winds. The low temperatures and relatively deep snow, keep bees tight in their winter cluster.

Snowfalls during the month are frequent and sometimes heavy. It is possible to have drifts of snow in the apiary and around individual hives. Fresh snow is not dangerous to bees.

In winter, we must protect bees from mice that crawl inside warm hives, animals knocking over the hives, woodpeckers hammering on the roof and falling snow and icicles from trees.

I often walk in the apiary after heavy snow and strong winds to check the condition of the hives. It is important this month to track the state of the bees inside the hive. I use a stethoscope, putting one end through the hole on the front board inside the hive at a depth of 10-15 cm. If I hear a calm and steady sound whilst tapping the outside of the hive which gradually subsides, then the queen is in a good condition and all is well.

When the sounds are disharmonious, with separate and clearly recognisable sounds, then there may be something wrong with the queen, but there is nothing I can do about that now. I need to wait for warmer days, on which I may combine with another colony. The anxiety the bees face through poor food or the presence of mice, produces an alarming sound.

To establish the cause of death where many bees have died or a whole colony has died, I take samples and send for testing.

The presence of crystals inside dead bees show that honey has crystallised. When bees have only heads, bellies, legs and wings, and the pectoral muscles are lacking, then they have been eaten by mice inside the hive.

In January, if there are insufficient stores, I feed them with fondant. I make this myself: 1 part liquid honey and 3-4 parts powdered sugar. I take 300-400g of fondant, flatten and put it on the frame over the ball with bees. At very low temperatures, I put use fondant in place of the feeder.

On warm days with temperatures above 8-10°C, bees fly around hives and make the first cleansing flights. On those days, I clean the front boards of snow, remove obstacles and clear dead bees from the entrances. When there is a heavy snow I put straw or cardboard on the landing board so that bees don't need to land on snow, where they may frostbite and die.

In January I am least busy in the apiary, so I use my spare time to produce or repair the hives and inventory, assembling frames and preparing for the upcoming activities in the apiary in the spring season.

February

The weather in February is characterised by sub-zero temperatures, snow and ice. Last year, the cold snap began in January and continued into February.

In February the plants start flowering – harbingers of the coming spring. Snowdrops appear first and bees collect pollen from these first. As the days warm, hazel flowers appear and bees fill their pollen baskets from these when the weather is sunny. Forest flowers appear, along with crocuses. Bees fly on warm and sunny days when the air temperature is above 8-10°C. The increased temperature makes bees more active. They remove honey from the centre of the nest, clean the cells and prepare them for laying eggs. The queen be-

gins to lay eggs, depending on the strength of family, age and quality of the queen, food and temperature. The bees must begin to maintain a constant temperature 34-35°C, fuelled with honey. Their consumption of honey increases to 1.5-2 kg per colony.

Bees take advantage of short warm periods for flight testing, cleansing flights and removing debris from inside their hives. During this period, I often visit the apiary, especially in sunny weather. I use the opportunity during the warmer hours to do my first spring examination and help the weakest colonies. I remove snow from the hives, because after melting, its moisture penetrates inside the hive and moisture is very harmful to bees.

Now I can arrange the hives in the apiary as I want them for the coming year.

In February, I do any activities I didn't have time to do in January at the first opportunity when weather and time allows.

Photographing Bees

Emily reports on our January Winter Lecture and the useful tips we gathered.

*Emily abbott
events@lbka.org.uk*

This was a great lecture! I'm a rubbish photographer, I use a phone instead of a camera and really can't imagine anyone ever being impressed by a photo I took. Yet, I came away with my eyes opened to the possibilities and so many tips that I'm going to have a go. I'm not planning on entering competitions, but Simon Croson – an Apimondia gold medallist – has shown me how photography could help my beekeeping.

Simon started taking photos to help him work out what was going on in his hives. If he saw something odd he took a picture and sort advice: post it online and you have access to a worldwide network of fellow beekeepers all happy to look and tell you what they see.

Taking photos of his bees and hive meant he could look carefully at the brood etc once he had the photo on his PC and could enlarge the image. He saw so much more than he was able to take in and remember during the inspection. It's this use of photography that appeals to me. I'll follow his advice and get a compact camera with an LCD display, the highest resolution I can and one that's water resistant so I can clean off the propolis and honey that it's bound to get covered in.

Simon talked about the fun of building up your own library of pictures, photographing the different coloured pollens you see being taken into the hive for example, or

the collection of pictures you take to document diseases you see, or things you have learnt about as part of the BBKA exams and want to have an example of for you to study, and also remember. By taking the photos you question more, see more and learn more.

Each of his photos takes him straight back to that day, that inspection and the joy (or disaster) he was facing. Each photo is a personal document which is why he advises those who do want to enter photos for competition that they get someone who isn't emotionally attached to each photo to give their view of which one to enter (Simon's wife made him enter the photo that went on to win at the Apimonda). Simon's tips about cameras:

- Whatever you're using from mobile phone to digital SLR, get to know what it can do inside out and everything it's capable of, as sometimes it's adjusting the camera set up that will get you an even better result – and if you don't know about the settings you won't get that picture.
- 50-60mm macro lens for close ups
- You could use a macro adapter instead of a macros lens, but Simon was recommending the 2nd hand market, saying there are some very good deals out there. Most people with expensive camera kit have looked after it so 2nd hand can still mean it's in good nick.
- Little compact cameras are good for taking pictures during inspections for documentation, sharing and asking questions etc.

January's Facebook (In)digest(ion)

LBKA's open Facebook page is an active community of over 1000 from around London and other part of the UK and world. Lots of interesting material gets posted. How can we possibly summarise it comprehensively? We can't, so here's a mere glimpse of what you might have missed. It should be a dinger... or should I say stinger.

Callie Nell
LBKA member

New year's resolution

Oliver St. John has a new year's resolution to start Queen rearing which pointed to the Queen Rearing UK Facebook Group – <https://www.facebook.com/groups/queenrearing/> – worth a look?



Queen rearing Facebook page



Young beekeepers: B-Craft B-kids club Facebook page photo

Sleeping bees

David Thornton posted an article on the first day of the New Year about sleeping bees – <http://blogs.discovermagazine.com/inkfish/2014/12/30/time-hive-makes-bees-exhausted/#.VM5aZGSsVpA>. There was doubt about the veracity of the article although the idea of sleeping bees and needing downtime to process or learn about the day was intriguing.

Young beekeepers

Paul O'Brien shared the B-Craft B-kids club Facebook page photo. Interesting photo and even more so is the Facebook club for young beekeepers.

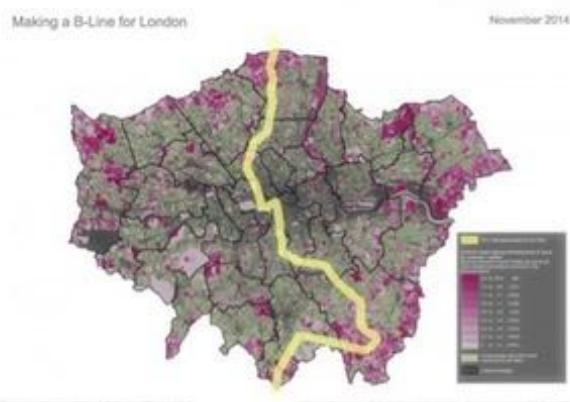
Suburban Beekeeper

David Thornton pointed to Top 10 Tips for the Suburban Beekeeper at <http://realbeekeeping.com/top-ten-tips-for-the-suburban-beekeeper.html>.

Oxalic acid

Niel Widger was asking for a cheap auto refilling and measuring, oxalic acid dispenser, Mark pointed to the snappily named Trickle 2 plastic dispenser available from Thornes (and others) – very cheap!

Alan Fritter started a discussion asking if its okay to apply Oxalic Acid when brood is present. The consensus was that the efficacy is lower with brood present – removing only a third or less Varroa. Some suggested removing brood and Mark pointed to a LASI(Laboratory of Apiculture and Social Insects) recommendation –



GIGL's (draft) map of the distribution of green space in London.



The flat-tailed leaf-cutter bee – *Megachile mendica* – lives throughout North America. Members of the *Megachile* genus cut neat pieces from leaves and flower petals to help build their nests. Source: USGS Bee Inventory and Monitoring Lab, CC by 2.0.

<http://www.sussex.ac.uk/lasi> – that you uncap to kill the brood and then return a day later to treat with OA they also advise that vaporising the OA makes it much more effective.

Heating the colony to 48 degrees for 30 minutes to kill the Varroa was posted but the advice was that it was an experiment done in a Lab and possibly too stressful for our bees. The Mite Zapper was suggested – a plastic drone frame that once sealed gets heated using a car battery for set time – but the downside is it kills both pupae and mite – said to be 85 to 95% effective. But as Mark Patterson pointed out, frame trapping is probably one of the best summer methods of keeping Varroa under control – how to can be found on the National Bee Unit Website.

Forage availability

Mark Patterson found some information in the GiGLer – Green Space Information for Greater London's e-newsletter – about GIGL's work (helped by LBKA member Karin Alton) on mapping forage availability, include an interesting (draft) map.

Different bees

Mark came across some great pics of American bees at <http://www.bbc.com/earth/story/20141011-bees-as-youve-never-seen-them-before?ocid=fbert>.

Mark also asked that any sighting of the Buff Tailed Bumblebee reported here for ongoing research of there winter activity: <http://www.bwars.com/index.php?q=content%2Fwinter-active-bombus-terrestris-data-gathering>

Dave Cushman's website

Penelope posted that Dave Cushman's website as curated by Roger Patterson is one of the best resources out there (<http://www.dave-cushman.net>).

Record winter blooms

Mark posted a link to an BBC article about the record number of flowers in bloom this winter with the thought of the implication for our bees: <http://www.bbc.co.uk/news/science-environment-30754443>.

Small Hive Beetle

An article from the Times of Malta was posted about the arrival of small hive beetle in Europe.

Ukrainian beekeeping

Victor Fursov posted a video from Vasyl Priyatelenko about successfully overwintering beehives in the Ukraine: <https://www.youtube.com/watch?v=xLDaQ3DS27I&feature=youtu.be>

There is also a honey harvest video with an interesting way to uncap frames: <https://www.youtube.com/watch?v=y74ECIfJMcQ&feature=youtu.be>

Small hives

Also Andrea von Berl ask where to find a small hive for beginners and was advised to do get training, an apprenticeship, she was also pointed to eco bee box in Utah as an alternative to the regular sizes.

A historical perspective

Paul O'Brien posted the first in a series throughout the month from the Historical Honeybee Articles - Beekeeping History Facebook page all well worth a look: <https://www.facebook.com/video.php?v=781740698547095&fref=nf>.

Pete Onedeck Polyank's link to the hidden hives of London: <https://londoninyourlunchhour.wordpress.com/2015/01/12/hidden-hives-of-london-version-2>



Window bees

Window bees

Paul O'Brien found a picture of bees that had apparently made their home in a broken window.

Drinking honeybee

Angela Woods posted a film showing for the first time in close a honeybee drinking: <https://www.youtube.com/watch?v=zWzCSqxGhSk>

Useless monsters?

Ace Lonzaga sent a link to an article (<http://bestfarmtreats.com/bee-vs-wasp/>) Bee vs Wasp with the question: Are wasps useless monsters?

Petition

Steve Alton posted a link to a petition against Bayer suing the EU for banning Neonics. Who would like to sign it? <http://action.sumofus.org/a/bayer-bees-lawsuit/13/2/?sub=fb>

Bumbles

Sara Ward asked if mail order bumble bees is worth it. Angela pointed to an article on Bumblebees in the Telegraph – <http://www.telegraph.co.uk/gardening/beekeeping/10116890/Are-mail-order-bees-a-good-idea.html> – that explains it is not a good idea. The general



Mail order bumblebees?

consensus was that providing boxes for solitary bees is better for conservation, an upturned plant pot filled with some used straw will attract them for free.

Adventures in Beeland: Mind your beeswax

Emily regular guest article from her excellent blog: <http://adventuresinbeeland.com/>. This month, she writes about the wax workshop she attended organised by Harrow Beekeepers. Also, see her blog entry for her writeup of our Winter Lecture on bee photography.

*Emily Scott
LBKA member*

On Friday a fierce cold came over me while I worked. My eyes weeped and my nose sneezed. As the day progressed, I felt so miserable that I skipped the Burns night dinner I had booked that evening – losing the chance to eat oaty haggis and creamy Cranachan. I feared I might have to miss Saturday's Harrow Beekeepers wax workshop.

Desperately trying to cure myself, I drank two lots of lemsip with honey from my hives and went to bed early. In the morning, I woke to find the wretched sniffing and sneezing had stopped. I can't prove it was the honey, but I like to think it was.

What a relief that I was able to go. The Harrow association had put on a packed practical day of learning how to roll, dip and mould wax candles, plus make furniture polish, soap and hand cream. Wax is a valuable product that beekeepers, including myself, tend to underuse. It takes the bees a considerable amount of energy and effort to produce it, after all – we should value it just as much as honey. It's excreted from the eight wax glands on the underside of bees' abdomens, before be-

*Rolled candles*

ing kneaded by the bee with its mandibles, adding a secretion from the mandibular glands. A worker bee needs about 4 minutes to complete the preparation of each tiny scale of wax, after which it can be moulded into place to form comb (Jürgen Tautz, *The Buzz about Bees* (2008)).

There were twenty of us doing the workshop, split into four groups of five. Each group took it in turn to do an activity with four instructors from Harrow. My group's first class was candle rolling using wax foundation, taught by Doreen Pattenson. Doreen has a website at <http://nascotwoodbees.co.uk> and is on Twitter at @NWBees. Below you can see some of her expertly rolled candles.

Doreen gave us lots of tips on candle rolling. One was not to do it on a cold day (like it was, being winter). We had a bit of trouble with the wax as it gets quite brittle and cracks easily when cold. She buys her wax foundation from Thornes – thorne.co.uk/candlemaking – and also from kemble-bees.com, which she feels has the best quality wax. It should be unwired, of course. If you buy Langstroth frame sized foundation you get more for your money.

Below she is demonstrating cutting the wax at an angle to start the candle.

Cut your wick to size and dip one end in molten wax. Lay the wick at one end and carefully wrap the foundation tightly around it, as tightly as you can.

Keep rolling till you reach the end. The tighter you've rolled it, the longer it will burn. Doreen's candles were extremely tight.

To decorate her candles, Doreen uses cookie cutters to cut out different coloured wax shapes such as little hearts. She then presses these into the rolled candle. If reluctant to stay on, the shapes can be encouraged into place with a hairdryer. But do not overdo the hairdryer, as the candle wax may start to melt and lose its pattern. She also buys little plastic bee pins for extra prettiness.

Next we went on to Bill Fitzmaurice, who demonstrated

*Cutting candle wax**Doreen beginning to roll a candle**Doreen rolling a candle*



Bill pouring polish



Dipped candles



Bill Fitzmaurice preparing candle wick



Glowing queen mould

how to make beeswax polish in about ten seconds, followed by how to make dipped candles in considerably longer time.

Prepare your candle wicks for dipping by straightening out the wick, pulling it down gently. You will need a long tall pot – Bill was using an asparagus boiler.

Quickly lower the string into molten wax, then draw it out again, keeping it straight. Repeat until enough wax has built up to look like the examples below. This is how people made candles before they used moulds or rolled sheets of foundation.

Bill has a winning lady. Here she is in pink.

And here she is in yellow. Smooth and immaculately turned out, yet hefty and capable of giving someone a good whack. Cheaper than the real thing too, as she doesn't require a palace to live in or a pack of corgis.

When we stopped for lunch, the bees were busy revelling in the sunshine. Water seemed to be on their minds, probably to dilute honey stores. Harrow have about twenty hives in their apiary, so we had no shortage of curious visitors. Lucky they didn't know what we were up to with their precious wax.

After lunch we had a candle moulding class with Jo



Waxy queen



Bees at water butt



Nabaa pouring wax into candle mould



Wax in candle mould



Harrow Beekeepers

Telfer. Jo has a clever trick involving pasta to hold the wick away from the wax when you pour it in. Below is my phone box candle.

And here's Harrow beekeeper Nabaa pouring wax into her mould. She did the workshop last year and was taking it again because she enjoyed it so much last time.

Finally the last class was with Judy Earl, whose immaculate wax creations have featured on this blog before. No photos from this class, as Judy kept us busy measuring out ingredients and stirring them together to produce delicious smelling cold process soap and hand cream. Goggles and gloves were required.

At the end of the day we all had several goodies to take away from each class – our rolled candles, dipped candles, moulded candles, furniture polish, soap and hand cream. Bill sent us this photo yesterday afternoon, along with a nice email which said:

Just to thank you for coming on the workshop today, a group photo is attached. We really enjoyed running the day and hope it'll inspire you to make more products from the beeswax you produce. If you have a local Honey show, please consider entering the

wax/candle classes, maybe even have a go at the National!

If you're interested in going on one of the courses, there are two a year and Bill already has several people on the waiting list for the next one. So get in there quickly – info on the course can be found at <http://harrowbeekeepers.co.uk/node/84>.

Upcoming events

Winter lecture: Picky Pollinators

Wednesday 11th February, 19:00 for 19:30 at Roots & Shoots, Walnut Tree Walk, London, SE11 6DN.

The Winter Lecture by Beth Nicholls from the University of Sussex will be about Picky Pollinators: Can bees learn which flowers offer the most nutritious pollen?

Please email admin@lbka.org.uk if you'd like to come.

All welcome, but LBKA members will be given priority.

Monthly meeting: Microscopy for Nosema and Acarine testing

Sunday 8th March, 11:00-12:00 at Fairley House Junior School, 220 Lambeth Rd, London SE1 7JY

Hands-on session in which you'll learn identification of Nosema and Acarine in a sample of your own bees. Non-members are welcome to come and find out more about LBKA.

Committee

Please do not hesitate to get in touch with a member of the committee if you have any questions, requests, suggestions (and offers of help)! We are:

- **Chair:** Richard Glassborow, chair@lbka.org.uk
- **Treasurer:** David Hankins, treasurer@lbka.org.uk
- **Secretary:** Emma Nye, admin@lbka.org.uk
- **Education:** Howard Nichols education@lbka.org.uk
- **Membership services:** Aidan Slingsby, services@lbka.org.uk
- **Forage:** Mark Patterson, forage@lbka.org.uk
- **Resources:** Paul Vagg, resources@lbka.org.uk
- **Events:** Emily Abbott, events@lbka.org.uk
- **Mentoring:** Tristram Sutton, mentoring@lbka.org.uk

Our website is <http://www.lbka.org.uk/>.

