THE FEDERATION OF BERKSHIRE BEEKEEPERS ASSOCIATIONS

The Federation, its Council, and its Officers cannot be held responsible for the views expressed in the Newsletter or possible errors.

March 2013

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In The Apiary

The weather remains changeable, and this the danger time for losing bees. Overwintered stores, if present, can have set so hard that the bees cannot break it down, so do feed if necessary with fondant. However, do not be in a hurry to open hives unnecessarily whilst the weather is still cold. The ambient temperature should be in the teens centigrade.

Remember that stale venom on your clothing will annoy even the most docile bees, so make sure that your clothing is clean.

Use spare frames to replace any that were worked to the outside last season. Also have a super of either drawn comb or foundation ready to add to each hive. Colonies should be expanding rapidly as March gives way to April. Now is a good time to replace the floorboard with a spare one, or clean the existing one; and refit the brood box.

A lot can be observed from outside of the hive. Providing that the weather is calm and the temperature is in the teens, bees should be flying and bringing in pollen, indicating that brood rearing is in progress. Perhaps you can see dead larvae outside of the hive? The cluster is liable to contract in a sudden cold snap, and this can lead to the brood on the outside getting chilled and being thrown out. Sometimes diseased larvae are discarded in good weather and found in little heaps. View these with suspicion and do not be afraid to send a sample to the Bee Unit to be checked for possible foul brood, which has been known to happen in Caversham and Wallingford.

f you think it is warm enough you can do your first inspection. Gently remove the crown board. It should lift fairly easily but if not, it may be stuck with propolis. If it has stuck, gently insert the hive tool all around it to fracture the propolis, so that the board can be removed with the least possible disturbance to the bees.

Remove an outside frame to give you room to work, and examine the brood frames. Is the Queen laying? Is the brood healthy and pearly white? If not, call for assistance and advice. It is possible that you will come across all drone brood instead of worker brood. This suggests that either the Queen is faulty or the hive is Queenless. Yes, workers can lay eggs, but they will result in small drones. Do not try to replace the Queen as she will be killed. Hopefully you have another colony to provide a frame with eggs to raise a new queen. If you suspect that anything is not normal, call for assistance and advice.

Check for varroa by removing some drone brood using an uncapping fork. The most likely place to find drone cells is down the edges of the frames. Remove two or three fork fulls and if you find more than three varroa, apply Apiguard, following the instructions on the packet or go to Vita's web page for full instructions http://www.vita-europe.com/products/apiguard/

Re-assemble the colony, placing your new frames on either side of the brood. Fit the queen excluder, then the super of either comb or foundation, add the crown board, and finish with the roof. Update your record book or card and clean the floorboard you have removed, ready for use in the next hive. Treat all hives similarly and look forward to a successful and happy season.

Learn how to handle bees by attending the demonstrations organised by your association to observe how more experienced beekeepers work and volunteer your own colonies for such demonstrations. They will be only too willing to help and advise.

Triad

Editors Corner

The end of February and into March has continued with a mix of weather and continued advice from our experts to ensure bees have sufficient food. There has definitely been more colour around in the form of spring flowers in the past few weeks, which can only be good. I was personally fascinated to read about the anti-ageing properties of honey and how evidence has shown the darker the honey the better the properties (see Slough and Maidenhead write-up). I would also urge you to study the appendix to this newsletter with an interesting chart showing 12 months of forage – provided by Andy Willis who spoke on this topic to the Reading Association. At South Chilterns last month we had a fascinating talk from Dr Michael Keith-Lucas about the evolutionary history of the honeybee. Although I found this talk interesting, there was so much information to absorb that it was almost daunting. However, I recommend reading the write up from Meryl Toomey in this newsletter as she has captured the essence of the story and has presented it in a logical and easy to read way.

The postponed AM of the Federation has now been rescheduled for 26th March.

Around the Associations

Wokingham and District Beekeepers' Association

Neil Marshall circulated copies of the Club's accounts for the year ended 30th September 2012. The accounts still need to be examined and Bob Loades and John Edwards have very kindly volunteered to do this on behalf of the Club. Once this has been done the members will vote on acceptance of the accounts at the next meeting on the 13th March. Neil highlighted that we have an excess of income over expenditure of £731.61. This is an improvement from £482.20 in the year 2010/11. Membership was up and expenses were down, which is always good news. We gained

10 full time members, ending the year with 87 full members, as well as a number of friends, partners and our Honorary President, Mrs. Rosemary Bayliss. Due to the very bad summer honey sales were down, but we managed to sell our remaining stock of granulated honey at the Wokingham Carnival. Thanks to Lorna Rivett and everyone else who assisted on a wet and cold winter's day.

Overall the club's finances are in excellent condition and we are financially sound.

Neil advised that we expect BBKA capitation costs to increase by £1.00 for 2013/14. It was therefore formally proposed by Neil and seconded by John Edwards to increase membership fees by £1.00 to £29.00 for full members. Friends will remain unchanged at £13.00. The vote was passed unanimously.

We are very appreciative of being able to use the facilities of the Wokingham Bowls Club, who rent us their clubhouse at a very favourable rate and for the assistance of their members who come in early to open up the bar and serve us drinks throughout the evening. We consider ourselves extremely fortunate and send our thanks to their members and committee.

Expenditure on guest speakers was down although the quality of the speakers was of the highest calibre so our thanks to Nigel Perkins for managing this so well. Thanks also go to Alex and Ian Atherton who spent a lot of time and effort getting our Microscopy group up and running. This is going from strength to strength. For those of you who are not aware, Alex and Ian are relocating to Devon. Our loss will be the gain of Okehampton, which we understand is very local to their new home. We wish them all the luck in their new venture. We did suggest they might like to travel up regularly and still help with the microscopy group but they could not be persuaded!

Members were then asked to vote on the proposal to wind up our membership of the Federation of Berkshire Beekeepers. As no members from any of the Federation's clubs, as far as we were aware, had come forward to take over the vacant committee posts, the members voted unanimously for the Federation to be wound up and any remaining funds distributed back to the various associations.

On conclusion of the formal meeting, we then had the pleasure of welcoming Dave Moss, who came to talk to us about bee wing morphometry.

It is believed that bees originated in Africa millions of years ago and gradually spread across the world. As the continents moved, split and collided, they pushed up mountain ranges, so populations of bees were isolated from each other. Certain land masses then got a lot colder and bees either adapted in those areas or died out altogether and honey bees started to develop distinct differences depending on their locations. In the Victorian era, gentlemen of leisure had plenty of time on their hands and they decided to study the wings of honey bees and realised there was a difference depending on where the bees came from. They concentrated on the main groups in Europe, Mellifera Mellifera, also known as the black bee, Caucasica, Carnica and Ligustica. Most of what we know about bee wing morphometry today is based on the original work done by the Victorians.

Before you can begin you need to collect your bee forewings. Dave suggested using sellotape to secure about 10 on to a small piece of paper (about 1" x 2") which can be viewed under a microscope. The wings are laid on the paper in two rows and then very very carefully, a piece of clear sellotape is laid on top. It is not as easy as it sounds. As the sellotape approaches the paper, static comes into play and if you are not careful the paper lifts and all your wings scatter before you can hold them in place. You then need a cheap and cheerful

USB microscope, which you can plug in to your laptop. Dave's is a x10 magnification camera microscope he bought from Amazon. You are then ready to measure the distance between the veins in the wings and there are specialist programs available that you can either download for free (with restricted use) or buy for a reasonable amount. These do all the hard work for you. Dave uses CbeeWing and Coorecorder by a company based in Sweden called Cybis.

We were then shown how to measure the Discoidal Shift, Cubital Index and Hantel Index and enter them into the program. It looks easier than it sounds. The resulting charts were very easy to read and very interesting. We would like to look at bee wing morphometry in our microscopy classes so we were very appreciative of Dave's talk. Dave also kindly gave us a copy of his presentation, which has already been forwarded to our members.

Garth Matthews then gave us an update on the BBKA Education Co-ordinators Workshop which he, Bob Loades and Nigel Perkins attended recently. Twenty associations were represented and the day was dedicated to helping each Branch structure, plan and communicate their training activities for new and improving beekeepers from 2013 onwards.

Training Co-ordinators plan to liaise with each other and see what specialist skills/courses were available in each group and, if possible, share resources. For example, Reading and Newbury already run beginner courses and we have the Microscopy group which we opened up to members of other local associations. As and when he has more information, Garth will update the members.

Garth also asked for a show of hands on who would be interested in taking part in a Disease Safari. This involves our Regional Bee Inspector visiting a number of different apiaries, all fairly close to each other, so time is not wasted on travel and explaining what they find in each hive. Likely to be a weekend or maybe a Monday in May. This was very popular and Garth will advise once he has further details. There was also support for workshops on swarm control, hygiene and varroa treatment, candle making, honey extraction and preparation for the BASIC Assessment.

John Edwards will be bulk ordering 1lb honey jars (with metal lids) to save costs. If you would like John to include your order with his please let him know as soon as possible. Mary Paul also has copies of her prize winning honey bun recipe if anyone would like a copy.

A very successful evening closed with our raffle, which raised £48 for club funds. Our last meeting of the winter season takes place on the 13th March when our speaker will be Andy Willis on the topic of purifying and maximising your wax crop.

Lynn Janes
Hon. Sec. Mobile: 07721 338833

Slough, Windsor and Maidenhead Beekeepers' Society

http://www.bbka.org.uk/local/slough-windsor-maidenhead

Neil Coxhead, Secretary SWM BKS

On Tuesday 12th February we welcomed Dr Sara Robb back to Slough, Windsor and Maidenhead. Last year Sara showed us how to make honey soap and she returned to give a talk about honey and anti-oxidants.

Sara grew up in Iowa, USA and moved to the UK after finishing her PhD. Although she is no longer in research she has maintained an interest in the many benefits of bee products and in particular with respect to the anti-oxidant properties of honey.

The main theme of her talk was that the anti-oxidant properties of bee products can be used to reduce the signs of ageing. She showed the results of research into the levels of anti-oxidants in different types of honey and the overall emerging message was 'the darker the colour of honey, the higher the age-defying anti-oxidants'.

The honey with the highest level is Buckwheat honey, which is not a local product but can be found in shops selling Polish produce. It was also interesting to discover that, contrary to the marketing hype, heather honey has more anti-oxidants than Manuka honey!

Sara recommends that we could all replace some sugar in our diets with honey and so boost our anti-oxidant levels in a very pleasant way.

At the end of the talk there was the opportunity to buy Sara's books including her most recent publication 'Beauty and the Bees' which contains more information on this fascinating subject.

Forthcoming Meetings

April 9th: Swarm Management - Clive Winslow

As always, details of all our meetings, topical articles and much more are on our website at: http://www.bbka.org.uk/local/slough-windsor-maidenhead

Reading and District Beekeepers' Association

Jon Davey, Secretary
www.rbka.org.uk

On 19th February at Caversham Methodist Hall we had a good attendance for a lavishly illustrated talk by Andy Willis from Southampton on the topic of '*12 months of Forage: a Look at the Floral Beauties Visited by our Bees in Central Southern England During The Year*'. Andy has been a beekeeper for well over 20 years, but his

training is that of a horticulturist and plantsman. He started beekeeping after taking-over a large garden in South Lincs, when he discovered, to his surprise that he was expected to look after 8 beehives and run a honey and beekeeping stall at 'the big house' for the summer fete. He was called upon to deal with several swarms and he estimates that the 8 colonies provided him with 27 swarms and casts that first summer. Andy says his 'learning curve' was vertical! Andy has his swarming well under control these days and is an advocate of shook swarms onto fresh frames when his spring monitoring of colonies reveal a big build-up of bees, even prior to queen cups starting to appear. Andy, with his love of all flowering plants, reaps extra pleasure from his observations of pollen loads from the fine stands of forage trees and plants in the Southampton area, which is also well provided with suburban gardens, chalk land plants, aided by a mild southern maritime climate. We beekeepers, young and not so young in his audience were drawn willingly into his world with examples of cherry plum, sallow, winter flowering shrubby honeysuckle (has a shorter tube and honeybees can access the nectar). In the questions and answers, other blossoms were discussed, including spring crocus, which although visited by bees, do have blossoms with rather short life. Andy explained how in some blossoms, both pollen and nectar are provided by each sex of flower, whereas in others this is not the case. For example, in willow, the male flower produces both pollen and nectar, but the females produce only nectar.

The poor forage conditions in the 2012 season were due at least in part to initial drought, low temperatures and because the continual rain washes nectar out of blossoms that face upwards such as blackberry. Andy brought with him some early blossoms picked that day in Southampton, not yet in bloom here, just 30 miles north. However, he did comment that he had spotted the first openings of cherry plum on the Swallowfield by-pass (it's much earlier than the related 'blackthorn'). It was a very satisfying talk much appreciated by our beekeepers who, at the moment, are still shivering when they walk around their beehives. Andy's list is appended at the end of the newsletter, and this will supplement information we may have on pollen load colours. With very many thanks to Andy Willis and all who attended.

March at Reading & District Beekeepers. We greet the spring in Reading with Reading & District Beekeepers Association's Annual Beekeeping Day. This year we are in Caversham Methodist Church Hall, Highmoor Road. On Saturday 23rd March. Public entrance 10-30AM- 4.00 PM. Free entry, talks from Dr. Sarah Robb 'Making Your Own Toiletries With Honey & Beeswax' Rob Nicklas ' Introduction to Beekeeping', Dr. Richard Pettifer 'Bees & Climate Change'. Displays, tastings, home made refreshments, everyone who is interested in beekeeping and would like to help bees, pollination and our food chain are welcome.

Jon Davey

The Reading & District Beekeepers Association

Annual 'Beekeeping Day'
23rd March 2013

A fascinating event for the whole family which kicks off the beekeeping season! It's intended for all whether you are someone who just wants to learn about bees and beekeeping or an experienced beekeeper.

Doors open:	10.30 am to 4.00 pm
Venue:	Caversham Methodist Church Hall Highmoor Road Caversham RG4 7BG

Headline events:

11.15am:	Dr Sara Robb presents - "Making Your Own Toiletries with Honey and Beeswax" Including soap making and many other products.
12.30pm:	Rob Nickless presents - "Introduction to Beekeeping" A short talk on how to get started.
2.15 pm	Dr Richard Pettifer presents - "Bees and Climate Change" A Professional Meteorologist and Hampshire beekeeper who will talk about the effect of climate change on our bees and beekeeping.

Other interests on the day:

Meet the beekeepers. Learn about honeybees. Taste the Honey.

Mead & Cake. Enjoy Homemade Refreshments. Exhibition stands. Join the Association.

Free Entry

Advert

South Chilterns Beekeepers' Association

Joanne Shanagher,
Secretary. Tel: 01189 721067

http://www.southchilternsbeekeepers.org.uk

We were delighted to welcome Dr Michael Keith-Lucas as our speaker for the February meeting, who gave an illuminating talk on *The evolutionary history of the honeybee*.

Dr Keith-Lucas began by saying that, originally a botanist, he is no world expert on this subject; but then went on to prove he knew a great deal more about it than any of us did. He took us through if and how bees collect pollen and nectar, and the development from a solitary creature, through colonial behaviour - where many individuals live together merely through availability of a suitable habitat - to true social behaviour with all its complex interactions between individuals.

Our bees evolved from the hunting wasps of the Jurassic period, though parasitic wasps persisted in their own right and are still with us today. For example, the ruby-tailed wasp will lay eggs inside a caterpillar where the young develop and pupate at

the host's expense. Many types can paralyse the lucky caterpillar first with a dual-purpose ovipositor, which injects venom and then eggs, and this is the structure that developed into the honeybee's sting. By the Cretaceous period 140 million years ago, some wasps had started to change to a vegetarian diet, and evidence from the first honeybees found preserved in 100-million-year-old amber were already vegetarian.

The beginning of the Cretaceous also saw the emergence of the first flowering plants, such as magnolia and water lilies, which were high pollen producers, but had no nectar. Pollen was perhaps more important, being a protein source, than nectar, which only provided instant energy carbohydrate. Wasps don't store nectar, but will eat some for a quick re-fuel. The wasp-pollinated figwort provides such a snack. The most primitive wasp made a very small nest of a few cells with one egg in each, feeding the young on little insects, (or in some species, pollen). The cells are made of paper, which the wasp chews up from plant material, and Dr Keith-Lucas pointed out that no-one can keep honey in paper bags. None of these cells is for storing nectar.

Modern wasps, ants and bees all developed independently from a common ancestor, but independent evolution still produced a similar trait in all three: all have sterile female workers, generated by a poor diet. Better food provision is all it takes to make queens and drones. Today the family tree is complex, divided into 9 major groups and 57 families. Only the four types within the Apidae are truly social; all the others are solitary – even if they happen to live closely together. Looking at the characteristics persisting in some of these groups in turn, Dr Keith-Lucas illustrated the evolutionary journeys made to arrive at the present day honeybee, developing hairier bodies, different shape mouth parts, and specialised pollen-baskets.

The most primitive bee has a proboscis of a very different shape from the elongated one of our honeybee, and it can't get into a narrow flower tube. It feeds on primitive shape open flowers like rock rose and kingcups, which have many easy-access stamens, lots of pollen – and no nectar. The pollen grains are spiny to help it clump together and to stick to the bees' bodies. The earliest bees to appear in the spring are the Andrenidae, a fairly primitive bee that is first to work the emerging flowers. They have no pollen basket, but show the start of the development of stiffer hairs on their legs, with slightly more branched hairs on their bodies, designed to catch some pollen. Dandelions are important for them; the spines on the pollen grains fit exactly into the hairs, and they need rakes on their back legs to pull it off, but it always leaves some behind on the body which can pollinate the next flower visited. Flower fidelity is developing, where the bee sticks to the same type of flower. Some species of Andrenids are important pollinators of orchids; the orchid flower looks like a female bee sitting on a dandelion, and smells like it too. Each orchid species has its own single bee species to pollinate it, and that bee works only that orchid, so their populations are interdependent. The flower mimics and exaggerates the characteristics of the female bee, so to the male it appears like a large bright smelly female and he will go for the flower in preference to the real thing. This can cause the bee population to crash, which in turn makes the orchid population crash; when there are fewer orchids, the boys go for the girls again, and bee numbers rise. This cyclic variation link has only been discovered recently.

The Colletidae family feed only on pollen too, and show the development from simple hairs into more complex branched hairs. They are sometimes called plasterer bees, as they smooth the walls of the cells.

The oil bees, the Mellitidae, collect floral oils as well as pollen, mixing them together into balls on which they can lay their eggs. This is where the maternal care ends, as the larva develops alone over winter, pupates and emerges in spring. There are male

and female bees that only meet for mating, and no sterile workers. Some species collect oils as a protein source instead of pollen. They have relationships with specific flowers such as yellow loosestrife and diascia, where the flowers have long spurs at the back containing the oil. The bees' extra-long front pair of legs has a sponge-like structure at the foot to mop up the oil, one foot in each spur. Again, each species of diascia has its own species of oil bee in a 1:1 relationship. This could be a risky strategy, but if environmental conditions are constant, the population is very safe, as pollen is always taken to the right type of flower.

Outside the UK are the carpenter bees, Xylocopinae, which still have large biting mouth parts fit for cutting out nest holes in tree trunks, bamboo or reeds to lay the eggs in. Similar to these, the Megachilidae family contains large bees of the tropics which cut holes in trees, and our leaf-cutter and mason bees. Neither of these families have any interest in nectar, as their mouthparts are not adapted for sucking; only biting. In fact our common Red Mason bee, Osmia Rufa, does not dig its own holes. Its favourite nest sites are the holes left in the soft mortar between the bricks of old walled gardens, where nails and pegs intended to support fruit plants have fallen out over the years. The re-pointing of old walls with modern hard mortar useless to the-mason bees has the effect of making this an increasingly rare habitat, and they are very willing to share a good hole with dozens of neighbours; so although this shows colonial behaviour, it is not true social behaviour. In fact they are better pollinators of fruit trees than honeybees are, so if you value your fruit, think twice before re-pointing. These bees have no pollen basket (corbicula); instead they have pollen-carrying (scopal) hairs in bands down their undersides which collect pollen as they brush over it. Some plants have evolved techniques of delivering pollen to a bee's underside in this way. When the bee lands on flowers of the gorse and broom type with two bottom petals fused into a keel, the force of the impact makes the stamens pop up and hit the bee between the legs from underneath. Honeybees dislike being walloped like this, and will avoid visiting any more of those flowers; as the early alfalfa growers discovered, honeybees are not the right pollinators for this crop!

There are cuckoo bees too, the Nomadinae. As you would expect, these don't bother to collect pollen, they simply lay eggs in other bees' pollen balls. These larvae hatch first, and feast on the hijacked pollen ball along with the host's own eggs. The stratagem for the deception may be looking similar to the target species, or emitting the correct scent, and as they don't collect pollen at all, they can be entirely hairless. There are also some cuckoo bee species amongst the bumblebees, the Bombus genus.

The Halictid family is the first in the family tree to show differentiation of a sterile worker bee caste and is colonial, another step on towards true social behaviour. Nests are more complex, having a single entrance hole to an underground central vertical tunnel with multiple chambers off it, into which the workers place pollen balls. A fertile egg-layer then comes along to lay the egg. These bees like Oenothera (evening primrose) and willow herb blossoms, whose pollen is specialised. The grains have long trailing hairs that enable them to clump in groups of four, and to stick themselves to a bee. Incidentally, rhododendron pollen has similar whiskers, which enable the pollen to chain up like a polymer as it is pulled off the plant in a long string. Bumble bees are strong enough to break the filaments, but unfortunately, honeybees can get so tangled in this that they can't fly. Add to this the fact that rhododendron honey is toxic, and you get the good advice not to grow rhododendrons and azaleas alongside your honeybees!

And now onto the truly social bees of the Apidae family, with males, females and sterile females, and highly complex interactions between them: theMeliponini tribe and the genuses Apis and Bombus.

The meliponines are the small stingless bees of the tropics, and whereas the previous types of bee we were shown nest in paper cells or in holes, these have developed wax-secreting glands and are the master wax users. Their nest has a long wax tube sticking out at the entrance, and leading back to the nest underground, or in a tree cavity. These bees show something we are more familiar with, as they are the first in our evolutionary journey to make combs. These are in horizontal rows stacked one above the other like shelves, and contain only brood, as there is no need for nectar storage in a tropical climate where plants produce all year round. The pots for pollen are a different size and shape and are placed behind themor around them in a sphere shape, depending on the species. The brood cells nearest to the food source probably get more food, which turns those larvae into drones or queens. The central brood cells which are furthest from the food source produce sterile workers. One species builds vertical combs with the brood cells back to back just as we see with honeybees; again the food is around the outside, with special cells nearest the food source for queens.

Bumblebees also have a sterile worker caste, and like to take over old mouse nests. The cells are constructed from wax, with lumpy-looking brood cells comprising several cells grouped together. For the first time there are three different types of pot, as honey storage makes its appearance in the evolutionary trail, and honey and pollen pots may be of different size and shape. The honey is every bit as good as the honeybees make, but only queens survive the winter so there is no need to create a large winter food store which can be raided by beekeepers. Bumblebees show no crop fidelity, and there may be pollen from 50 -70 flower species in the same load. But they can pollinate flowers of a different shape, such as hanging and snapdragon-type blossoms, out of bounds to honeybees which can't push their way in.

Finally, on to the honeybees. The wild species, Apis florea and Apis dorsata produce single large combs in the open, hanging off a horizontal branch – the structure we mimic in hive frames. They store nectar in wax cells, which needs defending from predators like man, so they have also developed stings. These cells are back to back, but now are inclined upwards at a 13° angle so that the nectar can't spill out, and they can be sealed with a cap for long storage. We know man has always braved harvesting these combs from portrayals in Neolithic cave paintings.

Apis mellifera is our familiar western honeybee, with all its subspecies. They are highly evolved, with complex differentiated social structures and interactions, and intricate mechanisms of collaboration and social control. They make wax cells in a standard size which are used for all three purposes – brood, nectar and pollen storage. Only the male drone and fertile female queen cells are different in size and shape, usually placed at the bottom of the combs. All the work is done by sterile females in a succession of tasks from birth to death, starting with hive cleaning, then nurse and guard duty, progressing on to foraging. Dr Keith-Lucas delighted us with pictures of a French hive decorated with larger-than-life cartoon bees engaged in each of these jobs – housekeeper complete with sweeping brush and headscarf, guards with spears and helmets on sentry duty. If you are thinking of following suit, now would be a good time – before the bees wake up and look about them. If you leave it until the summer, they won't recognise home when they come back to it □ .

Our bees developed originally in Africa and gradually migrated north into Europe, so it's likely that swarming behaviour is a relic of the seasonal Savannah climate, when bees probably migrated in tune with the wet and dry spells, just like the other ani-

mals. Today the triggers are related to other stimuli such as overcrowding and temperature change.

Pollen gathering has become a specialism with the development of greater hairiness and sophisticated equipment. Once doused in pollen, the honeybee cleans first its antennae, pulling the pollen onto its front legs. It's transferred by dragging them through the stiff hairs on its middle legs, which in turn clean the thorax. The middle legs are pulled through the specialised combs on the back legs, which rake it off into the gap in the knee joint. When the joint is flexed, pollen is forced down to the stiff pollen-trapping hairs of the corbicula, the pollen-basket.The one spot this ultra-efficient equipment cannot reach is right in the middle of the bee's back; that pollen stays put there to do the pollination job required at the next flower visited. Dr Keith-Lucas remarked that his years of experience of analysing honey in Reading illustrate how far honeybees will go for pollen. Despite the abundance of urban gardens rich in flowers, in May most of the pollen in Reading comes from rapeseed, obtained from several miles outside town. This is borne out by the Rothamstead research project which bar-coded individual honeybees and placed fluorescent markers on surrounding crops; those bees travelled up to 6 miles – much further than we previously thought.

As a final note, Dr Keith-Lucas asked us to take the time to look more closely at the flying things visiting our emerging flowers as spring progresses. Most of the creatures paying a call will not look much like our familiar honeybees, but most of them will be bees; the solitary bees from a dozen other branches of the family tree are also very important pollinators.

Meryl Toomey

Useful Links, Advice and Information

Video on how to use Vita Apiguard (all pack sizes)

http://www.youtube.com/watch?v=3RGSp3VEeAg

For added interest: What are the different types of hive demonstrated in the video?

Interesting article on how Honey suffers after bad year for bees by Hannah Briggs on the BBC Food website.
http://www.bbc.co.uk/food/0/19585638

NBU Advice for Obtaining Bees:

Join Beebase - By joining BeeBase you can access beekeeping information and ask for advice or help from the Bee Unit: https://secure.fera.defra.gov.uk/beebase.

Your Regional Bee Inspectors are:

Southern Region: Nigel Semmence at: nigel.semmence@fera.gsi.gov.uk,

The main website is: https://secure.csl.gov.uk/beebase/public/Contacts/contacts.cfm National Bee Unit, Central Science Laboratory, Sand Hutton, York YO41 1 LZ, tel: 01 904 462 510, email: mailto:nbu@fera.gsi.gov.uk .

South Eastern Region: Mr Alan Byham, fax/tel: 01306 611 016

Letters to the Editor are always welcome as long as they are signed. Anonymous letters and letters not in English will not be published. The Editor reserves the right to withhold names.

Contributions, including emails, to arrive with the Editor by the 7th of the month for publication by the 20th of that month. Contributions received after this will be held over for a later month.

Advertisement entries, to be received by the Advertisement Manager in advance of the 20th of every month. Rates**:** 2 Lines for £1.00; Commercial rates: £1.00 per line. Please make cheques payable to FBBKA. To be sent to the Advertisement Manager: Mr Jon Davey, 107 Northcourt Avenue, Reading RG2 7HG. Tel: 0118 975 0734.

Twelve months of forage

Plant list for talk by Andy Willis

Reading and Bee Keepers Association, February 2013

Month	Plant		Pollen colour	Pollen	Nectar	Comments
	Common Name	Latin Name				
January	Christmas Box	Sarcococca		√√	√	Garden plant. No petals for protection, requires 6°c for the bees to fly
January	Winter Cherry	Prunus x subhirtella		√√	√	Garden tree. Flowers in mild spells throughout the winter, requires 6°c for the bees to fly
January/February	Hazel (cobnut)	Corylus avellana	Pale greeny yellow	√√		Worked by bees for pollen only as no nectar secreted (wind pollinated plant). Requires calm still mild weather for bees to work it. Small pollen loads as difficult to collect.
February	Snowdrops	Galanthus nivalis	Bright Jaffa orange	√√	√	Plant in the green (with leaves) in the spring rather than dry bulbs in the Autumn. Single flowered not double.
February	Lenten Rose Christmas Rose	Helleborus Species and hybrids	Pale creamy yellow	√√	√	Flowers point down protecting pollen and nectar from bad weather, long flowering season.
March	Winter flowering shrubby honeysuckle	Lonicera fragrantissima or x purpusii	Pale creamy yellow	√√	√	Sweetly scented garden plant, long flowering period. Highly attractive to our bees. Best shrub for the beekeepers garden.
March	Cherry Plum	Prunus cerasifera	Rusty Brown	√√	√√	First true spring blossom. Valuable source of early pollen and nectar for colony build up
March	Willow	Salix; species & hybrids	Yellow (Bees dusted allover)	√√√	√√	Valuable source of pollen and nectar needs dry weather when in flower as easily spoiled by rain. Male trees produce pollen and nectar, female trees produce nectar only.
March	Almonds and Apricots	Prunus dulcis & armeniaca		√√	√√	Early flowering nut & fruit trees – blossom can be spoiled by late frost. Eagerly worked by honeybees.

Month	Plant		Pollen	Pollen	Nectar	Comments
April	Cherries & plums	Prunus avium & domestica		√√	√√	Early flowering nut & fruit trees – blossom can be spoiled by late frost. Eagerly worked by honeybees.
April	Dandelion	Taraxacum officinale	Orange – bees dusted on underside	√√	√√√	Possible honey crop if enough and good sunny weather flowers closed on dull or bad weather. Yellow staining honey
April/May	Apple	Malus domestica	Creamy pale yellow	√√	√√√	Possible honey crop if good weather and colonies strong enough and enough orchards
April/May	Maple & Sycamore	Acer species Acer pseudoplatanus	Lime/Olive green	√√√	√√√	Possible honey crop of high quality honey, medium amber with a hint of green, very thick.
May	Oil seed rape	Brassica napus	Yellow, bees dusted on nose	√√	√√√	Warmth and moisture in the soil/air humidity help in the honey flow. New varieties do not yield like the old ones. Honey sets very quickly
May	Hawthorn (May)	Crataegus monogyna	Pale cream (large loads)	√√√	√√√	Does not yield every year. Temperature required for most nectar is around 23°c. Sweet almond scent / taste to the honey.
May	Holly	Ilex aquifolium	Very pale cream	√√√	√√√	Yields for about 2/3 weeks at most. Pollen and nectar from the male trees, nectar only from the female trees. Pale water white honey.
May	Horse-chestnut (conker)	Aesculus hippocastanum	Brick red	√√√	√√	Flowers late April and May, useful source of nectar and distinctive colour pollen. Brood larva can sometimes turn pink on a diet rich in its pollen.
May/June	Raspberry	Rubus idaeus		√√√	√√√	Yields a high quality honey tasting of raspberries. Bees work flowers even in poor weather. Honey granulates quickly.
June	Field beans	Vicia faba	Grey	√√√	√√√	Yields a good quality amber honey if plant density not to high. Extra floral nectarines also found on this plant.

Month	Plant		Pollen	Pollen	Nectar	Comments
June	Acacia	Robinia pseudoacacia		√	√√√	Yields high quality pale honey in hot weather, 25°c and above. Not at all if cool and cloudy. Flowers best after a hot dry continental type summer in previous year.
June	Lime (Linden)	Tilia species			√√√	Yields best in warm humid sultry weather, with moisture in the soil and overcast skies. The pollen is generally not collected. Yields honeydew in some years if dry and lots of aphids
July	Blackberry (bramble)	Rubus fruticosus	Slate grey	√√√	√√√	Yields pollen and nectar in bright sunny weather. Rain can wash out the pollen and nectar as the flowers point upwards.
July	White Clover	Trifolium repens	Biscuity brown, small loads	√√	√√√	Yields best with moist soil or after heavy dew, showery weather with good spells of sun suit it best, with large day/night temperature range.
July	Sweet chestnut	Castanea sativa	Yellow (bees dusted allover)	√√√	√√√	Yields best under hot dry conditions best nectar when temperature is above 27°c, with humid, sultry nights. Dark amber honey with bittersweet notes.
July	Rosebay Willow-herb (fireweed)	Chamerion angustifolium	Blue/purple	√√√	√√√	Very pale almost water white honey. Requires a big stand/area usually after fire.
August	Himalayan balsam	Impatiens glandulifera	White	√√	√√√	Garden escape waterside plant. Bees get white stripe of pollen down their backs. Yields best when its roots are in / touching water. Natural England trying to eradicate.
August	Purple Loostrife	Lythrum salicaria		√√	√√	Waterside wildflower, giving a useful supplies of pollen and nectar in water meadows. Native.
August	Mint	Mentha species		√	√√√	Water mint and other mints worked freely for nectar

Month	Plant		Pollen	Pollen	Nectar	Comments
August	Heather (Ling)	Calluna vulgaris	Biscuity	√√	√√√	Requires rain in the growing season and good weather for the bees when in flower. Very thick / thixotropic honey strong flavoured bittersweet with hints of almonds when fresh or possibly dark chocolate notes.
August / September	Sunflowers	Helianthus species		√√	√√	Nectar secreted most in heat wave conditions 27°c and above. Requires good weather. Not a reliable honey crop in the UK at the moment. Honey sets quickly.
September	Golden Rod	Solidago species	Yellow	√√	√√	Good late source in urban areas that contribute to the rearing of winter bees
October	Ivy	Hedera helix	Creamy Orange-yellow	√√√	√√√	Last to flower of the important pollen and nectar plants. Honey sets very fast in the comb and has to be melted out. Flavour is very strong but mellows after 6 months storage. Yields best in warm or mild humid weather with little or no rain.
October	Loquat	Eriobotrya japonica	Cream	√√√	√√√	Sweetly scented garden plant. Only flowers after a dry summer
November	Mahonia, oregan grape	Mahonia x media	Yellow	√√	√√	Sweetly fragrant winter flowering garden shrub, much worked by bees in urban areas.
December	False castor oil plant	Fatsia japonica	White	√√	√√	Shrubby ivy relative from Japan. Yields best with shelter of wall receiving summer shade but winter sun.
December	Winter heliotrope	Petasites fragrans	White	√√	√√	Rampant garden escape with highly scented midwinter flowers worked by honey bees when weather permits (temperature above 6°c)