



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.

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General Secretary:
Martin Moore
Tilehurst
Reading
0118 967 7386
07729 620 286

E-mail: berksbees@btinternet.com

Web: <http://www.berkshirebeekeepers.btck.co.uk/>

Newsletter Editor:
Sue Remenyi
Curtis Farm
Kidmore End
RG4 9AY
0118 972 3699

Editors Corner

The days are definitely getting longer now and the forage is becoming more evident. It seems that the wet and windy weather has not proven to be too much of a problem for the bees and indications from fellow beekeepers I have met at recent meetings are that they are seeing their bees flying regularly and pollen is being brought in. That perennial question of to feed or not to feed is being widely asked!

In January you may recall I was bemused by the idea of using bee venom as a beauty treatment and last month I was intrigued by the idea of a honey diet to lose weight. Well this month's revelation (or not perhaps) is the development in the UK by Dr Matthew Dryden, consultant microbiologist, with the Royal Hampshire County Hospital, of a new wound healing treatment called *Surgihoney*. Women in a trial group presenting for caesarean section had *Surgihoney* applied as a single application wound dressing at the end of the procedure.

All women were followed up and examined for surgical site infection for 30 days. The results of the trial showed a reduction in surgical site infection of 63%. Although the healing powers of honey have been accepted for thousands of years, the creators of *Surgihoney* claim to have boosted the natural antibacterial properties. Inexpensive to produce and easy to store and use in varying climates, this does sound like a good news story. You can read more from <http://bit.ly/1l0N7QS>.



This issue of the newsletter provides a summary of the Federation AGM by the new Chairperson, Caroline Bushell. After much debate and discussion as to the purpose and the future of the Federation we are delighted to report that the organisation will continue, albeit with a much reduced remit. This month is the first of the summer series of 'In My Apiary' and we kick off the season with the story of two years experience with a polystyrene hive by Dave Moss from SCBKA. The association reports provide more interesting write-ups from winter talks by experts on a range of topics.

Sue Remenyi

C WYNNE JONES

Ty Brith Pentrecelyn Ruthin Denbighshire LL 15 2SR
Tel. 01978 790279. Fax. 01978 790265

wynnejones@btconnect.com

www.bottlesandjars.co.uk <http://www.beesupplies.co.uk/>

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Federation News

Federation AGM 22/2/14 (Woodcote Village Hall)

Meeting Summary

The AGM resulted in three major decisions which should be of interest to everyone.

1. By majority vote, the Federation will be retained but with the proviso that it only fulfils the following minimalist role:
 - a. To act as a single BBKA data and membership fee collection point
 - b. To communicate with the membership relevant information from BBKA and other sources
 - c. To generate a monthly newsletter
 - d. To send a single representative to BBKA events (e.g. ADM, Chairmen's days) and to provide relevant input and feedback from the membership.
2. By majority vote, it was agreed that grants of £250 per association would be paid.
3. By majority vote, it was agreed that the considerable reserves held in the bank will now be distributed between all four associations. A small float of £100 will be retained for emergencies. This will again benefit all Federation associations. You may recall that last year it was agreed to pay the increase in the BBKA fees from the Federation reserves.

Your Federation officers for 2014 are:

Chairman:	Caroline Bushell (South Chilterns)
Vice Chairman:	Michael Sheasby (Slough, Windsor & Maidenhead)
Secretary:	Martin Moore (Reading)
Treasurer:	Ian Duddle (Reading)
Newsletter Editor:	Sue Remenyi (South Chilterns)
Membership Secretary:	Katie Rennie (Reading)
BBKA ADM representative:	Caroline Bushell (South Chilterns)

The full minutes of the meeting will be available shortly and published in a future newsletter.

Caroline Bushell
Federation Chairman

In My Apiary

My first 2 years experience with a polystyrene hive by Dave Moss, SCBKA

Polystyrene hives have been used successfully in Europe and Scandinavia for over 30 years. Swienty (<http://www.swienty.com/uk/>) are the major manufacturer in Europe.

About five years ago a couple of UK beekeeping suppliers began to import the Swienty Langstroth poly hives. A year later, polystyrene National and 14x12 hives began to appear which were manufactured in the UK. Swienty have since started to manufacture National and Smith poly hives.



The polystyrene that is used to make these hives is not the flimsy packing material you get with a new washing machine! It is compressed to give a density of greater than 100gm/litre. At 100gm/litre, it is approximately twice the density of the polystyrene used in the manufacture of motorcycle helmets. Even though the wall thickness of poly hives is approx 40mm, a poly brood box is a little bit lighter than an equivalent cedar brood box.

In late 2011 I did a survey on the availability and cost of poly 14x12s. I wanted a poly hive to be compatible with my wooden hive parts. There was only one that met my requirements and that was from Paynes. Unfortunately it only comes as bottom bee space. My preference is for top bee space.

The Paynes boxes come in one piece whereas the other manufacturers come flat packed so have to be glued together. I bought a mesh floor, 14x12 brood box, feeder, roof and 4 supers. It is recommended that the outside of the boxes are painted with a water based paint.

The Paynes brood box locates into 4 lugs on the mesh floor which is great for stability but it means you can't put a half onto the floor. No entrance block was provided but a standard wooden one fits. All my wooden frames fitted without a problem. The runners are made of metal so are very robust.

The bees went into the poly hive as a caste from Phil Scofield's apiary in May 2012.

This is when I hit the first problem. The supplied crown board is just a piece of 4mm clear plastic sheet with no bee space on either side. This trapped a load of bees between the crown board and the top of the frames and squashed them! I cut a piece of thin polythene sheet to size and used that instead. I made sure that it had about 10cm overlap on all sides so that when the roof is replaced the sheet is securely trapped by the roof. The flexibility of the sheet allows the bees to escape so no more dead bees! A top bee space hive would not have had this problem.

Problem number 2 was the supplied varroa board. It was impossible to get the board out without scraping all the hive droppings off. This was because the clearance between the floor and the board was too small. I cut a thinner board, 5mm rather than the supplied one at 8mm, from an estate agent's sign and all was well.

Because the poly hive walls are so thick I had to be very careful whenever I did an inspection to make sure most of the bees were off the top surface when I replaced the supers. I still haven't worked out a method which doesn't squash a number of bees. Paynes have modified the design of the varroa board and the roof following feedback.

Some notes from my records. The poly hive is number 3. 1 and 2 are wooden 14x12s

2 June 2012

- 1 brood & eggs on 3 – 4 frames
- 2 brood and eggs on 3 – 4 frames
- 3 wall to wall brood and larvae

30 June 2012

- 1 all OK
- 2 all OK
- 3 queen cells seen so split the colony leaving 1 queen cell

23 July 2012

- 1 part filled super
- 2 part filled super
- 3 no eggs or brood
- 4 brood all stages

(Number 4 is the split from number 3)

15 September 2012

all 4 colonies reasonably strong

2012 was one of the wettest years on record so honey production was nil from all 4 of my hives. The poly hive seemed to build up very quickly in early summer and was usually ahead of the wooden hives.

The bees went into winter 2012/13 as 4 very strong colonies.

2013

I took 4 colonies through the winter of 2012/13 and had to feed all 4 colonies with fondant until mid-April when we had our first warm day.

Notes from my records

14 April 2013

- 1 small patches of brood

- 2 small patches of brood
- 3 Strong! Added QX and a super as there is nectar coming in
- 4 small patches of brood

7 May 2013

- 1 all OK
- 2 needs food and brood – looking weak
- 3 added clearer board as first super is full. Queen cells! Made up a nuc
- 4 All OK

3 June 2013

- 1 all OK
- 2 no eggs or brood
- 3 3 supers full
- 4 all OK

14 June 2013

- 1 all OK does not need a super
- 2 weak, added frame of brood from 3
- 3 removed 4th super. Added 2 supers of foundation
- 4 no brood or eggs. Queen cell on frame 4 (superscedure?)

20 June

- 1 does not need a super
- 2 no QC but no eggs either
- 3 drawing foundation in supers
- 4 all OK

22 July

- 1 all OK
- 2 united with nuc
- 3 removed 2 more supers
- 4 all OK

In all I took over 150lbs honey from No.3, the poly hive, and nothing from the others.

2014

2 January 2014 – Oxalic acid treatment

- 1 3 or 4 seams of bees
- 2 3 or 4 seams of bees
- 3 bees spread across all 11 frames, very strong
- 4 3 or 4 seams of bees

Conclusions.

The poly hive builds up very quickly in the spring so gets the colony off to a flying start.

I've had no manipulation problems with the poly hive and it stood up to the recent gales with only a brick on the roof. One thing I will be doing is putting some Vaseline around the top surfaces. I've noticed a few bits of polystyrene coming away where the bees have propolised the surfaces together.

The cost of a poly hive is about half the price of a traditional cedar hive. The set up I bought cost £100 whereas a cedar hive would be over £200.

If we ever get a “normal” year of weather I should get a better comparison and I'll report back.

Demise of honeybees in Northern China

48% of all honey consumed in the UK is imported from China, yet China's indigenous honeybee (*Apis cerana*) which previously thrived despite varied geographical conditions across China, has decreased dramatically in numbers, due to environmental pollution, insecticides and competition from Italian bees (*Apis mellifera ligustica*) that were introduced to the country just before the turn of the 20th century.

With the demise of bees across huge tracts of North Western China, pollination relies increasingly on the wind and human intervention. Apples and Pears are a specialty of Hanyuan county, Sichuan province. Farmers here can usually harvest about 5 tons of pears a year, but this increasingly depends on artificial pollination rather than honeybees.

Each April, the farmers collect flowers, and brush male anthers to obtain pollen, which will be dried for two days. They then tie a handful of feathers on a long bamboo pole, the feathers are lightly dipped in pollen and children are used to climb the trees to apply to the blossom in order to pollinate the flowers. Hundreds of farmers climb up trees to pollinate flowers, one by one. "It was unbelievable the first time I saw farmers doing it," says Tang Ya, a pollination researcher from Sichuan University.



"For fruit growers, artificial pollination can guarantee profits, but as more young people leave their homes to seek jobs in cities, I'm afraid that artificial pollination will be very difficult to achieve in less than two decades". A hive of bees can pollinate 3 million flowers a day, but a person can pollinate only 30 trees.

Extracted from People's Daily online

Wokingham Beekeepers Association

A New Approach to Keeping Bees



In mid January, on another damp and soggy evening, we met to celebrate Christmas and the New Year. We decided to go back to the Walter's Arms in Wokingham and were not disappointed. Both the food and company were great.

"A New Approach" was the title of Roger Patterson's talk on Wednesday 12th February. Roger is very well known in the beekeeping world and wears many caps. He now looks after Dave Cushman's website and also runs a website which he believes is the only one dedicated to honey recipes (www.honeyrecipes.org.uk). If you have any com-

ments or recipes you would like included please contact Roger directly via his website.

Over the last few years Roger has changed the way he keeps bees; with the increase in pests and diseases, heavier than normal colony losses (last year Roger's losses were 50%) over both winter and summer, queen problems (failing, disappearing, early supercedure), Roger found that remedial action was often needed and quickly. He therefore decided on a different approach, which should lead to apiary management benefits. He now treats his colonies as a unit, rather than as individuals. A unit can consist of say 4-6 colonies and a donor nucleus/colony that is used to service the honey producing hives.

One colony always has a brood box used as a honey super above the queen excluder, to provide drawn spare brood comb which is instantly available when you want to create a nucleus or replace old comb. This also gives the comb builders something to do. Although there is no guarantee, it is thought that this might delay swarming. The bees also tend to draw out straighter comb when it is above the queen excluder. Another advantage of drawn comb is that it does not go stale. It can be stored for some time, as long as it is looked after properly. How many times have you put foundation in to the hive and the bees have ignored it, or pulled out some of it, or just bitten chunks out of it. There is no need to extract any stores the bees might put in this brood comb, as they will just move it as required.

Roger likes to have at least 1-2 spare drawn combs to give to each colony. As combs will be shared between all hives it is essential to make sure you can spot disease, otherwise you will be storing up trouble for the future.

A typical apiary might consist of a few good colonies, one not so good and maybe a poor one. The plan is to try and get all the colonies to the same level, by taking bees or comb from the donor hive when necessary.

How do you make a support colony? To suit your own circumstances; it could be a nucleus or a full size colony. Your support colony may not be the same colony you started with at the beginning of the season as circumstances change. It works very hard and is an important asset.

You will need comb, bees, brood, food, queen or queen cell and room to expand. You can use an existing colony or make up a new one by taking bees from three colonies. By using bees from three hives they should not fight when you put them together. Roger favours one brood comb with young bees and one comb of food.

Depending on the temperature when you make up your colony, you cannot guarantee that the bees clinging on to the comb will be young bees. If it is chilly older bees hang on as well. The way to ensure you have young bees is to shake bees into the roof and leave them for 10-20 minutes. The ones left at the end of the 20 minutes will be the young bees. Shake them into the corner of the roof and then into your hive. Leave them for a couple of hours and then add your queen cell or if adding a queen, leave for 6-8 hours. If you do this in May, by the end of the summer the colony should be large enough to over winter successfully, assuming we get a normal summer.

You could use a swarm, but you might need to re-queen as new queens seem to be failing.

So to recap, your unit comprises the following:

4-6 hives, one with a brood chamber with foundation above a queen excluder and your support colony. When you need to replace comb in your main colonies, take it from your brood box above the super. You can give the old comb back to the support unit if it needs it.

When your support unit has built up and needs more room, you can add a brood box above the queen excluder to provide more drawn out comb. You can also put a frame of drone foundation into the brood box above the queen excluder and leave them to pull it out.

When you have a brood break in your main hives, you can give them this pulled out drone foundation. Let them fill it with drone brood which will hopefully catch a lot of varroa. To make sure you kill all the varroa mites, put the frame in a freezer for a few days.

If one of your honey producing queens fail, you can take the queen from your support colony, so there is no brood break and let the support colony raise a new queen.

At the end of the season you have a spare colony you can keep in case you lose one over winter or you can unite it with another colony.

The benefits:

- flexible management,
- no extra equipment needed
- can use older/poor equipment for the support unit
- help overcome queen problems
- a surplus colony which can be over-wintered
- make increase
- prepared for winter losses
- main colonies are fully productive
- ready supply of fresh brood comb
- old comb easily replaced
- possible help with varroa control but only if you have a brood break
- spare queen and the opportunity to cull poor queens

Roger closed his session with questions and answers and a demonstration of a Bailey Board.

As usual, Roger gave us an interesting and thought provoking talk and we thank him for making the long journey to come and speak to us, especially as we were still experiencing awful weather.

Our last winter meeting of this season takes place on Wednesday 12th March. Nigel Semmence will be coming along to update us on bee diseases, the Asian hornet and any other relevant hot topics. We look forward to seeing you then.

Lynne Janes



South Chilterns Beekeepers Association.

The birds and the bees

Using marvellous close-up photographs of flower structures and pollen grains, we were treated to a fascinating account of the relationship between flowers and pollinators, and its development over time with Dr Michael Keith-Lucas. Although I can report the facts here, sadly without the richness and quality of the illustrations it does not do justice to the marvellous account Dr Keith-Lucas gave us. You will have to use your imaginations to supply the missing pictures.

150 million years ago during the Jurassic period there were dinosaurs galore; but no flowering plants, no nectar, and no insects or birds with sucking mouth parts. The only mechanism available was wind pollination. A plant such as a yew tree had to produce about a million pollen grains in order for one single grain to chance to land in the right place – upon a droplet of liquid less than a millimetre across on the tip of the female flower. This wasteful method means there is pollen in the air all year round – very useful for Dr Keith-Lucas's other skill, forensic science.

By the end of the Jurassic period the first insect-pollinated plants appeared, such as the beetle-pollinated Ephedra genus. Such insects feed on pollen as a protein source. The solitary bees evolved from meat-eating hunting wasps; modern wasps will still eat pollen if there are no insects around to munch. Pre-dating true flowers, these plants have no nectar.

The first flowering plants of the Cretaceous period, 140 million years ago - like water lilies and magnolias - still have no nectar, just pollen. Beetles are the main pollinators, but as their aim is to eat the pollen, the plant has to rely on some bits of pollen being rubbed off in the right place by accident. These primitive flower types have many stamens but are usually large and white, since beetles have no colour vision. The related but more sophisticated Calycanthus is a red-dish brown colour, though still beetle-pollinated.

As flowering plants expanded from the tropics to temperate zones there were no insects available, and these plants became wind-pollinated instead. In catkin-bearing trees the female stigmas are dry, unlike the conifers and yews which have a liquid droplet. The mystery of how the dry stigma catches a pollen grain is explained by physics. The smooth pollen grains rub against the walls of their compartments as they escape and become negatively charged, springing apart from each other. The stigmas are positively charged, and attract the pollen grains to them. This is a less wasteful method, as less pollen is needed to do the job. In contrast, the four species of cedar tree all produce pollen on the first frosty night of the autumn and coat everything dramatically in a layer of yellow overnight. Grasses have stamens hanging down, and are so prolific that one square metre of a cereal yields 10 billion pollen grains. Out of the air fall 50 thousand

pollen grains on every square centimetre of land and sea in the world every year - unimaginable quantities (check the dust on top of your wardrobe!).

In grasses the female stigma emerges later than the male stamens; this is called protandry. Most plants practice protogyny, like the salad burnet. When the red female stigma flowers are receptive, the male buds are not ready yet; ladies first.

Early in flowering plant history, flowers began to attract insects, starting with bees; but still only providing pollen. Many of our current flowers are still a primitive open shape, like poppies and roses, which attract by offering pollen or by scent. Colour does not yet feature; as bees cannot see the red end of the light spectrum, the scarlet colour of the poppy is invisible to them and it would appear black. Incidentally, Dr Keith-Lucas's analysis of a local honey sample revealed a 35% opium poppy content – enough to spoil the taste by making it bitter and hence unsaleable.....except perhaps at Reading Festival... :-)

Once flowers evolved to produce nectar, the petals developed violet or ultraviolet veining as guidelines to point the way to the nectar in the flower centre. A flower offering both pollen and nectar gets the visiting bees "hooked" on the nectar, and their hive waggle dance brings more bees back. The pollination process is then so efficient and reliable that much less pollen is needed on fewer stamens. Beetles display no such flower fidelity. Another trick used by plants such as clover to keep the bees close and busy is to have multiple florets, which keeps the bee hanging around for longer visiting all the florets on the flower-head.



Another mechanism is sex attractant, beautifully demonstrated by a Mediterranean bee orchid. This flower pattern mimics a female bee sitting on a flower, and exaggerates all the desirable qualities a male bee would go for; the mimic is larger, brighter, hairier and smellier than the real female bee, so the male goes for the flower in preference to the real thing. This can lead to a collapse in the bee population as the females are left unmated, resulting in cyclic variations of flowers and bees together, as each of the orchid species has only one bee species as pollinator. This doesn't happen

in the UK; as the flowers spread beyond Mediterranean regions the bee species did not follow, so our bee orchids developed self-pollination.

Other orchid species evolved different attractants. Oncidium orchids produce sprays of flowers which hang down, and look just like a gang of bees in the air. This exploits the aggressive instincts of its bee pollinator species; the local bees defend their territory, so will descend in a cloud to see off the rivals, attack these "bees" and in so doing pollinate the flower mimics.

The next set of high-magnification slides illustrated the mechanism by which pollen escapes ending up as the bees' lunch. Pollen grains which are wind-distributed are smooth to enable them to hold that negative charge. Bee-distributed grains are spiky, and the hairs on a bee's body are branched, making it easy for the grains to get trapped. It's hard for the bee to rake it out into the corbicula – imagine trying to comb out a piece of tinsel – so some always gets left around to pollinate the next flower. New bees get pollen-collecting as a job before they graduate onto fetching nectar; I wonder if this is because they need to be that bit more vigorous? The most common colour for pollen and pollen-bearing flowers is yellow, like rock rose and marsh marigold. These have stamens which can be "buzz-pollinated". The bee tries buzzing at different frequencies until it hits the right one that makes the pollen fly out, and learns from this; thereafter it gets the frequency right first time. For wind pollination, size matters; the grains have to be no more than 30-35 microns to float horizontally (or to put it another way, there is room for a line of 30 pollen grains in a millimetre). For insect pollination this isn't an issue and some plants have huge pollen grains – Alcea (hollyhock) being one of the biggest, and Myosotis (forget-me-not) species one of the smallest. In Reading town, one of the commonest pollen grains in honey is oilseed rape, followed by forget-me-not.

Some flowers have developed mechanisms for ensuring not all of that pollen gets taken away to the hive larder. A bee can't easily pull pollen off the middle of its back, so Digitalis (foxglove) flowers offer a handy landing platform and lovely purple guidelines to show the way to the nec-

tar. Pollen is deposited in the middle of a bumblebee's back, and as it pushes its way inside to reach the reward, the hidden stamens under the top edge of the cup rub across its back, picking up the pollen. It makes the plant successful by conserving precious resources. A honey-bee does not have the strength for this feat, so you can tell by the flower shape what sort of creature is designed to pollinate it. Salvia flowers such as common sage have two little knobs which block access to the nectar, so the bee forces a way through this arch, which knocks the stamens down onto its back. These back-pollen mechanisms are not found in native British plants. Another version of the idea is exemplified by the bright yellow keel petal flowers of *Ulex europaeus* – gorse, furze or whin, depending on where you live – where the force of a solitary bee landing on the keel forces the petals apart and the stamens spring up underneath the bee, pushing pollen onto the scopal hairs. This is not a mechanism approved of by honeybees, who won't return for a second blow between their legs. This was discovered after the failure of an alfalfa crop in the US; the honeybees brought in to do the pollination job had to be replaced by solitary bees thereafter.



Where the nectar reward is harder to reach, rather than purple guidelines, the entire flower can be the attractant colour, as in *Viola* and *Delphinium* species. The nectar is in a spur at the back and needs a creature with a long tongue to reach it. Some bees have learned to take a short cut by nibbling holes in the spur and bypassing the pollination process; such robbing can severely damage, for example, a crop of field beans.

Plants that offer a dual reward of both nectar and pollen are often pink, like Thyme and Dahlias. Parallel evolution occurs all over the world, resulting in similar mechanisms between pollinator and pollinated in different climatic zones. Another trick to maintain the interest of pollinators is the large compound flower panicles of *Aesculus hippocastanum*; these horse chestnut candles maintain the power of attraction with what looks from a distance like one big showy flower. Each individual flower that has already been visited changes the stamen colour from yellow to red, and thereby makes them invisible to bees. *Crataegus* has a similar trick; individual visited May flowers remain in place in order to make the overall hawthorn blossom seem larger, but the centre of the cup of each one changes to red once its nectar has been collected.

On the whole, honey bees prefer a horizontal landing platform while bumble bees will climb up and under, pushing away obstacles like the hairs on a campanula bell or the snapdragon jaws of *antirrhinum*. It's common for the pollen of bumble bee pollinated flowers to be in groups of four with threads attached. These tangle up with neighbouring groups of four to form chains a bit like polymer strings. Bumble bees can cope with this, being stronger, but honey bees cannot and get mortally entangled – another good reason not to try and feed your honeybees on rhododendron. The advantage to the rhododendron of these strings of pollen is that a big pollen mass gets pulled out and enables several thousand tiny seeds to be set. No wonder rhododendron is so effectively invading our native British woodlands.

Another odd partnership is displayed by the South African oil bees and the *Diascia* genus. The oil bees have spongy structures at the end of the two front feet which fit exactly into the two oil-producing spurs of the *diascia* that it pollinates. Each species of plant has its own species of oil bee, which uses the oil to mix pollen into a ball in which it can lay its eggs.

Some plants are wasp-pollinated, like the tropical fig which has a small pore into which the pregnant females creep to lay eggs. The males emerge first, fertilise the females and die inside, and only the females leave the fig.

Umbellifers are mostly pollinated by flies – you may have noticed they don't smell sweet! You often see large numbers of beetles too, but they are not good pollinators as they eat the pollen, and don't move across the plants in a group. The predatory beetles may well be taking advantage of the free flies provided; ladybirds on cow parsley are there for their own lunch. Umbellifers sometimes have a dark flower in the centre masquerading as a fly to draw other flies in.

Some arums achieve ant-pollination by a reward system of lollipop-shaped growths at the base of the plant's spadix which attracts the ants into the pollen-containing space below. Others like

Arum maculatum rely on flies which, attracted by the really bad smell, push past downward-facing hairs and find themselves trapped between them and the upward-facing hairs further down. Once trapped, the male flowers open and shower the flies with pollen. The spike then withers, releasing them to visit the next plant and complete pollination. [This suggestively shaped plant has a lot of folk names - snakeshead, adder's root, arum, wild arum, arum lily, lords and ladies, wake robin, friar's cowl, devils and angels, cows and bulls, starch-root, cuckoo-pint, Adam and Eve, bobbins, naked boys, and jack-in-the-pulpit. Anybody know any more?]

There are a number of arum plants which reveal by their overpowering smell of rotting flesh, or appearance of raw meat, and even heat-production, the fact that their pollinators are carrion-eating flies and beetles. Such a one is *Amorphophallus titanum*, a native of Sumatra with a ten-foot tall flower. A specimen in Kew of this titan arum, also called corpse flower or carrion flower because of the revolting smell, had a corm weighing 91kg when it was re-potted in 2006. After the flower spike dies off the plant produces one twenty-foot branched leaf every year, until the corm gets heavy enough to send up another flower spike.

Primula vulgaris was the next example of pollination partnership; primroses can be one of two flower shapes, or morphs. The pin morph has short stamens and long pistils, and the thrum form is the other way around (have a close look at the centre of the primroses when yours come out in the garden). The result is that pollen from a flower of one morph cannot fertilise a flower of the same morph, and they are adapted for pollination by different pollinators, or by different body parts of the same pollinator. The length of the tube shows that only a creature with a long proboscis can reach into a primrose, and they are pollinated mainly by the long-nosed *Bombus* or bee fly, with a bit of help from early Brimstone butterflies that love the bright colour. *Lantana* has similarly long-tubed flowers, into which only butterflies can reach.

Moths have a different technique from butterflies; they don't land on a flower, they stay on the wing hovering, so moth-pollinated flowers are usually horizontal. Coming out at dusk to attract moths means the flowers are often pale colours which show up more readily, and they may lay on a scent too, like *Oenothera* the evening primrose and *Lonicera*, the honeysuckle, even mimicking female pheromones. When Darwin discovered on his Beagle voyages an orchid with a nectar tube 1 ½ feet long (*Angraecum sesquipedale*) he surmised there must be a matching pollinator moth with a tongue 1 ½ feet long. He was laughed at then, but twenty years ago that moth for Darwin's orchid was in fact discovered.

As a test of our attention, the next slide was a clever montage of a variety of different pollen grain shapes at huge magnification, and we were invited to recap the reason for each of the specific shapes. The long thin ones were butterfly-pollinated; smooth ones were for beetles; spiky grains fitted into bees' hairs; small spikes were for flies. All are unique to their species and readily identifiable; a DNA pollen fingerprint can prove someone's presence at a crime scene extremely precisely.

There are some other pollinating creatures; in the UK we have no bird pollinators but it's a common technique in the tropics. Hummingbirds hover for nectar with their beaks pointing upwards, so the flowers for them are like the bottle brush plant type, with downward-hanging flowers in orange or red, for maximum visibility against green. Unlike bees, birds can see red. Some plants like passionflower and aquilegia exist in different colours and shapes in the old and new worlds. Blue columbines of the old world are bee-pollinated, while the new world varieties are red with downward-hanging flowers for the birds. All our multicoloured garden variety Granny's Bonnets are hybrids between these two.

Bats play a role too. As you might guess for a night-flying echo-locating pollinator, no bright colours are needed, but smell is important, especially if the smell is reminiscent of the bat-cave. These flowers have to hang down into clear space below the branches, or sprout straight from the trunk like the smelly durian, to allow unimpeded flight. The cannonball tree produces flowers straight from the trunk well away from branches, and offers a mucilaginous nectar that bats loves to suck up in a long string. In return, they get a pat of pollen deposited on their foreheads, ready to rub up against the next flower. The South African sausage tree and the various bananas are all bat-pollinated (though not our domestic edible banana – *Musa Cavendishii* is a cultivar, reproduced vegetatively by parthenogenesis).

Other partnerships exist; there are monkey-pollinated flowers in Africa, marsupial-pollinated flowers in Australia and gerbil-pollinated flowers in South Africa, each the result of pollinator adaptation. Our current range of flowers has developed through mutual advantage, ensuring the pollinator will visit other flowers of the same species. With only one pollinator for a specific plant there is always a nectar reward for the creature, which doesn't have to be shared with anybody else. The disadvantage is that plant and pollinator populations are so reliant on one another that a population crash in one will have the same effect in the other. Who knows what havoc rapid climate change may wreak in this sensitive balance, evolved slowly over millions of years?

Meryl Toomey

The Bee Shop
Top Quality Beekeeper Clothing at Affordable Prices
See our website www.thebeeshop.co.uk
Full Suits (Round Hat & Fencing Veil Styles) in White, Camel, Olive & Camo
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Sizes from Infant to XXXL
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Reading Beekeepers Association:

Urban Pollinator Project

January 14th at the usual Venue of Caversham Heights Methodist Hall reading Beekeepers received a lavishly illustrated talk from Dr. Nadine Mitschunas on her work at Reading University on the Urban Pollinators Project. This is a three year project from 2011-2014 and the questions to be researched are:- How does pollinator biodiversity in urban areas compare to that of nature reserves and farmland? Where are the hot-spots of pollinator biodiversity in urban areas? What can we do to improve their diversity and abundance in urban areas? Four cities/urban conurbations are under study: Bristol, Edinburgh, Leeds and Reading. The project is led by Bristol University with the universities of Reading, Leeds and Edinburgh as academic partners.

The urban sites are divided into distinct groups i.e. Residential (gardens & allotments), woodland, public amenity grassland/parks and other green spaces and commercial sites. In Reading 12 teams field walk square kilometre areas of the selected sites studying pollinating insects, including bees of course, and the available forage and environment correlating biodiversity of insects and plants. Dr Nadine was able to inform us that the number of insect visits in the study period April to September was well down in 2013 compared to 2011 and 2012. Reason? Extreme weather! Our disastrous March 2013. Commenting on the results from residential areas, allotments have been found to be more bio diverse and prolific than gardens! This probably counters what we gardeners fondly imagine when we admire our flower borders. It seems you need blossoms in quantity rather than specimen, i.e. strings of raspberry, currant bushes, overgrown cruciferers are more attractive to our vital urban pollinators than our blooms grown for colour! In respect of our urban pollinators statistically we have 26% bees, 67% hoverflies, 5% Lepidoptera and 2% beetles and others. It is interesting to note how few butterflies we have now.

During the course of the project so called 'rivers of flowers' have been introduced to public amenity grassland. These consist of mainly wild species which have the objective of improving the biodiversity and can be seen on several well-known green amenities in Reading. e.g. Palmer & Cintra Parks, Christchurch Meadows and Caversham Crematorium. During Dr. Nadine's talk we saw some beautiful pictures displayed of foraging bees on the research sites. Many of these can be accessed on Urban Pollinators websites and associated blogs. The sites will also show the high profile partners the project has e.g. the wildlife trusts in the regions concerned, DEFRA, The Scottish Government, The Wellcome Trust and The Museum of Wales. The three year project had a budget of ten million pounds.

(<http://www.bristol.ac.uk/biology/research/ecological/community/pollinators>).

A very energetic questions and answers session completed the talk. It transpires that the greatest biodiversity in the UK is in fact to be found in national parks. Roadside verges despite the dandelions have poor biodiversity, commercial sites likewise. This was a very thought provoking talk, and we gained the impression that a considerable amount of research is going-on regarding bees and pollination in the UK. Not before time!

Our final Session of reading's winter programme is Reading & district Beekeepers Annual Bee-keeping Day, Saturday 22nd March from 10-30-4.00 PM open to the public. Free entry. The aim is to promote beekeeping locally. At Caversham Heights Methodist Hall.



John Belcher
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Slough Windsor and Maidenhead Beekeepers

Beekeeping under the Microscope

On a wet and windy Saturday at the end of January members gathered for a talk by Dinah Sweet. Dinah and her husband John travelled from their home in Wales to speak on the subject of pollen identification by microscopy. Dinah and John are very experienced beekeepers and exhibitors; Dinah is the President of the Welsh Beekeepers Association, the Chairman of BIBBA, a honey judge and a seasonal bee inspector.

Dinah talked us through the equipment needed for identifying pollen and how to make reference slides. Using a microscope with the view displayed on screen she showed us the basic structure of pollens and how to pick out the individual features which help to identify the different flower pollens. With the pink staining the slides show the intricate and often beautiful shapes of individual pollen grains. We learned about the various structures and features of the grains such as spikes, rods, columns, apertures and colpi. It was a surprise to learn that pollen can change colour throughout the day.

While Dinah talked John prepared some slides with pollen extracted from honey samples brought along by members. The session ended with Dinah picking out sunflower, prunus and hawthorn pollen in the samples. The talk proved to be a fascinating subject and left many members resolving to get acquainted with the association's microscope.

The International Meeting of Young Beekeepers (IMYB)

The February meeting was billed to be a talk given by a local trading standards officer about selling honey and the law, but a late cancellation has deferred this talk to April. Fortunately we were also due to hear from Lewis Thomas, at 16, our youngest member, who was part of the English team sent by the BBKA to Munster in Germany last year.

Lewis stepped up to the mark with an interesting talk supported by very professional Powerpoint slides. Lewis has been a beekeeper for nearly four years and started his learning on a Beginners course run by Slough, Windsor and Maidenhead Association branch. A year later he took and passed the Basic Assessment, and he could not know it then but he would meet his assessor, Serena Watts, again on the selection team for the 2013 IMYB.

Lewis described the selection process held at Stoneleigh where he was selected to join the 2013 team. The ten candidates were tested with a written exam, practical exercises identifying flowers and bee anatomy, answering questions on the hive and a five minute presentation about themselves and their beekeeping experience. The final team consisted of two candidates cho-

sen on the day, a team leader who was part of the 2012 team and they would be accompanied by Serena Watts. Before the event held in Munster between 20 and 23 June, there was training day and Lewis was very grateful for the extra coaching support provided by Tony Wolstenholme.

According to Lewis's account the event was great fun and the English team ended up in a very creditable fourth place behind the Austrian, German and Czech teams. There was a comprehensive write ups in Beecraft magazine. Lewis found it an inspiring event and is more than a little sad that as he will be unable to participate in the next event as he will be busy with his GCSEs. However if any other associations have beekeepers who are aged under 16 then a place in the 2014 team could take them to Poland this year.

The remainder of the meeting was filled with a quiz devised by Stephen Jones who showed film extracts of interesting activity inside a hive. Stephen used shots from the film narrated by John Hurt 'More than Honey' and then challenged the audience to work out what was happening. It was a fun way to end an enjoyable evening.

And Finally A story from the US

"I queried my neighbors about starting a hive. Most were receptive, except for one. This particular neighbor has always had issues with everyone in the neighborhood. They are the type of neighbors that have a dozen dogs that bark all day and all night, but expect the other neighbors to cut them slack. When the shoe is on the other foot, they are the exact opposite of what they demand from others.

In any case, the city approved my beehive request. So, I strategically placed my hive behind a 7' screen. . . . As you might expect, the complaints to the city skyrocketed. Bee stings in the immediate area went up 10-fold over previous years. The noise was unbearable. We even had complaints of bears in the neighborhood. All of this caused by the bees. The city hauled me to court. The complaining neighbors showed page after page after page of medical bills from bee stings, paint damage to their cars (?!?), even the vet bill for a dog that was stung to death by my bees.

The case was closed when I simply told the court that I had not yet populated the hive".

The advertisement is for Bee Basic Ltd. and features two images of beekeepers in full protective suits. The text lists various pieces of equipment and their prices:

- Jackets from only £32
- Bee suits from only £42
- Leather gloves £10.50
- Smokers £16

Below the list, it says: "+ bee veils, smocks, hat & veils, tools and more ..."

At the bottom, it states: "Free delivery on orders over £100. Call us for a free brochure, or visit our web site."

The website address www.beebasic.co.uk is prominently displayed at the top right. The company name "BEE BASIC LTD" is in a stylized font at the top left. The address "5 Hillcrest Avenue, Pinner, Middlesex HA5 1AJ" and email "sales@beebasic.co.uk" are at the bottom left. A phone number "020 8866 3664" is at the bottom right, with a note "Mon-Fri 9 am - 5 pm except Sundays".

Storm Damage - Request for help from the BBKA

As the bad weather seems to have now subsided many are left with the task of clearing up, assessing the damage and facing the challenge of moving forward to rebuild their lives; while others are still living in the chaos. The BBKA is interested to learn how many of our members have been affected so that we can if possible pull together to help those reinstate equipment and bees for those who have suffered from the hurricane force winds and flooding. To help us identify where help is needed, please share the following survey link with all beekeeper members and complete from an association perspective as well. Once we have analysed the returns, we shall share it with you, so that we all know where assistance and support is needed. [CLICK HERE TO TAKE PART](#)

For your Diary

Date	Topic	Event Host	Contact
8 March	Beekeeping for Beginners	Wisborough Green Beekeepers Association	www.wgbka.org.uk
8 March	Special Interest Day on the topic of Varroa control	BBKA, Stoneleigh Park 10.30-4.30	jan.alcock@bbka.org.uk
11 March	Celebrating 21 years with a history of Bees for Development in 21 objects with Janet Lowore	SWMBKA	http://swmbks.weebly.com/meetings.html
12 March	Bee diseases and the Asian hornet with Nigel Semmence	WBKA	http://www.wokinghambeekeepers.org.uk/#/winter-meetings/4575212056
19 March	The Decline of England's bees with Dr Thomas Breeze	SCBKA	www.scbka.org
22 March	RBKA Annual Beekeeping day	RBKA	www.rbka.org.uk
29 March	Skep-making course with Martin Buckle	SCBKA	www.scbka.org
8 April	Selling honey and the law with Honour Ryan, Windsor Trading Standards	SWMBKA	http://swmbks.weebly.com/meetings.html
26 April	Bee Market and Auction	West Sussex Beekeepers Association	www.bbka.org.uk/local/westsussex/auction

Reading and District Beekeepers Association

Annual 'Beekeeping Day'

Saturday 22nd March 2014

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.

Caversham Methodist Church Hall, Highmoor Road, Caversham, RG4 7BG

Headline events include Illustrated Talks by Prominent Beekeepers

Doors open: 10.30 am to 4.00 pm

11.15am Tom Salter: Managing the Swarming Impulse in Honey Bees

12.30pm Rob Nickless: Introduction to Beekeeping

2.15 pm Clare Waring: Honey Hunting in Nepal, Belize & Africa'. Clare, who is an editor of "Bee Craft", beekeeping's most influential magazine, will have some stunning exotic Insects & Flora Illustrated.

Other interests on the day:

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

Mead & Cake. Enjoy Homemade Refreshments. Exhibition stands.

Children's activities. Join the Association.

FREE ENTRY

Association websites

All four Federation member association websites have a lot of information – some of which may only be relevant to that association, but there is also quite a bit that is useful to us all. Here are the links for your reference:

Reading & District Beekeepers Association: <http://www.rbka.org.uk/>

South Chilterns Beekeepers' Association: <http://www.scbka.org>

Slough, Windsor & Maidenhead Beekeepers' Society: <http://swmbks.weebly.com/>

Wokingham and District Beekeepers Association: www.wokinghambeekeepers.org.uk/

Useful Links, Advice and Information

<http://www.apinews.com/> This website is a mine of information from around the world. You can subscribe to their newsletter.

<http://www.dave-cushman.net/bee/newhome.html> This website has a lot of really useful information for the beekeeper.

<http://www.beekeepingforum.co.uk/> This is a portal for all things beekeeping.

<http://www.bbka.org.uk/> The British Beekeepers Association.

<http://hymenopteragenome.org/beebase/> Beebase is a comprehensive data source for the bee research community.

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

Contributions 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 20th of the month for publication by the 7th of the following month. Contributions received after this may 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.
