

BBKA News

The newsletter of The British Beekeepers' Association,
incorporating the **BRITISH BEE JOURNAL**



No: 202 – June 2012

Spring Convention 2012



Spring Convention 2012. Photos by Simon King

The BBKA 2012 Spring Convention was held at Harper Adams University College in Newport, Shropshire during the weekend of 20–22 April. It was the first time the BBKA had used this venue, which had much more space and improved facilities than was possible in previous years.

Lectures, workshops, practical courses and trade shows filled the days for Convention attendees and a variety of excellent eateries ensured appetites of all natures were sated.

Turn to pages 9 and 30 to read more experiences of the BBKA's 35th Spring Convention.



Disease Recognition

Read the handy 'best practice' guide from the NBU to help ensure you can identify abnormal brood on page 7.



Clipping your Queen may Help Retain your Colony

For advice on limiting losses through swarming by using queen clipping, see page 19.



Solitary 'Leaf-cutter' Bees

Find out a bit about the bees that cut holes in your rose leaves, which they use to line their nests on page 29.





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Chairman's Letter



Usually late April in the part of the East Riding of Yorkshire where I live means sunny conditions and plenty of oil seed rape for the bees to forage. As I write it is a wet, cold and miserable Sunday and over the past week or so we have had extended periods of rainfall, but fortunately, to date no serious flooding. A break in the weather yesterday did allow me to check my colonies for food stores; these

were OK, but I noticed some dead bees that had been tempted out to forage and became chilled and unable to return to the colony. Locating your hives in the sunniest aspect can be detrimental if bees are attracted out by the sunshine only to become exposed to cold ambient conditions. But hopefully by the time this *BBKA News* reaches you the weather will have improved and we will be managing our bees with the view to raising new queens, changing brood frames and maybe managing swarms.

So many organisations now use the honey bee as part of their agenda to promote habitat diversity or flower growing, or to voice concerns about the effects of pesticides in agricultural and horticultural use. Currently, we lack our own BBKA bee friendly sticker which could be put onto pots containing flowers that will benefit honey bees and other pollinators, and promote our work. What we do have is an excellent BBKA booklet *Honey Bee and Insect Pollinator Food Sources*, which was published this March. Copies are available from the BBKA office so why not order a few, take a trip to your local garden centre and ask them to display some for you and give copies to your gardening friends. Gardeners really do seem to like the information they contain.

Few weeks go by when there is not some news item or scientific paper relating honey bee losses to pesticides. It is surprising how uninformed many people are regarding some of the products they use in their gardens. So please check the label on the container before you squeeze the trigger and make sure you are using the product as you should. Encourage your neighbours to do the same.

At one time the BBKA hosted a spray liaison scheme, but today faster agricultural processes have made the keeping and management of an effective database for association spray liaison officers quite difficult. The BBKA website still maintains a list of the spray liaison officers that area associations have told us about and we will continue to do so. Please let the office know if you wish to be added to the spray liaison officer list.

The BBKA has published a leaflet *Honey Bees and Pesticides*, which was included in April *BBKA News* and can be found on the BBKA website. It covers all users of pesticides whether they are farmers, spray contractors, local authority operatives, horticulturalists or gardeners. Please read it and use it to help you know what to do in the event of your bees appearing to suffer from exposure to pesticides.

David Aston, BBKA Chairman

Cover photos: Main images of Spring Convention 2012: Simon King; Top right: Courtesy of Fera; Middle: Paul Abbott; Bottom: David Baldock.

Disclaimer: Opinions expressed in articles in *BBKA News* are those of the authors and do not necessarily reflect those of the BBKA.

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PRINT AND DISTRIBUTION

BBKA News incorporating the British Bee Journal is published monthly for its members by BBKA, Reg. Charity No. 212025. Copyright 2012 BBKA.

Printed by: Avenue Print Management, 1 Blighs Road, Sevenoaks, Kent TN13 1DA. Tel: 01732 742397

Distributed by: First Move

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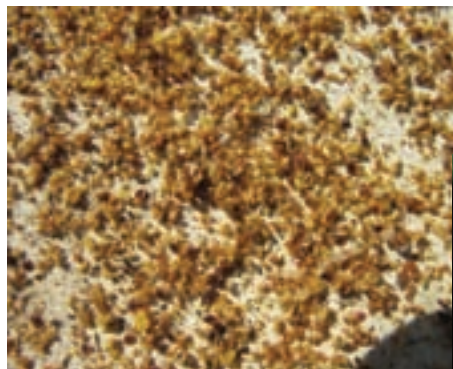
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In the Apiary

This time of year used to be called the June gap as there was very little food for colonies. But, with modern agricultural methods, new crops and the increase in urban beekeeping, the June gap no longer exists for many beekeepers. The heavy rains in April may well have delayed the flowering time of some food plants. However, it is always important to check

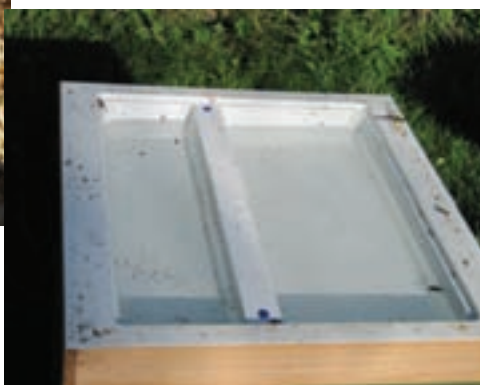


that your colony's stores are not getting too light. By this time the colony size is large with plenty of brood to maintain — indeed, the colony is now nearing its maximum size.

Varroa management is also very important, because as the colony has expanded the number of mites have also increased. We are all aware that varroa is the number one pest these days and it is unlikely that any colonies on mainland Britain (or Europe) are free of varroa. Not only does varroa weaken a colony and provide an effective vector for virus transmission to bees and larvae, but it is also a major source of stress to bees. Like us, when bees are stressed they succumb to other diseases and their lives are shortened. The National Bee Unit quotes one thousand mites in a colony as the maximum that will be tolerated without causing any significant effect on the colony; we should all have a method to reduce the number of mites that can be used throughout the year. It has been shown that measuring the daily mite drop or measuring the percentage of drone larvae infested with mites do not provide accurate estimates of active mite levels, but having said that, they are indicative and probably the best that most of us have. In addition if you see adult bees with shrivelled wings it is a good indicator that virus levels in the colony are getting too high and a way of reducing this can be to reduce varroa numbers in the colony.

High varroa levels: what to do

At this time of the year it is better not to use chemicals to control varroa numbers if at all possible. The only exception would be a colony that is virtually broodless and one that will not be producing any honey. Thymol preparations can be used and, if pyrethroids (Apistan and Bayvarol) have not been used for four years they are also effective as a one-off treatment (it appears that pyrethroid-resistant mites are less viable than others when the selection pressure from pyrethroids is removed). However, better to use a non chemical approach.



Top left: Varroa mites on a monitoring floor. Above: Plastic rapid feeder. Right: Varroa monitoring floor. Photos by Dr Bee.

The simplest method is dusting with icing sugar, which seems both to dislodge mites from adult bees and to stimulate bees to groom each other thereby dislodging mites. This is only effective if the mites fall out of the hive through an open mesh floor. Dusting can be done every time the colony is inspected and is said to remove up to 20% of the mites from a colony.

Trapping mites in capped drone brood is also simple and effective, but should not be done too many times as it takes a lot of energy to produce drones and can weaken the colony. The easiest way is to put a shallow comb in the brood nest between two normal brood combs. The colony will invariably draw brood comb below the bottom bar and when the larvae are fully sealed the drone comb can be cut off the frame and disposed.

Keeping varroa mite numbers down at this time of year will help ensure the winter bees, that must be in top condition, are less likely to be infected with virus, and more likely to survive the winter months and build the new colony in the following year.

Housekeeping for warm days

Hopefully, the weather now is warm and the bees are working well. All colonies, whether they have swarmed or not, will be preparing for next month when in most areas there will be an excess of nectar brought into the colony and stored as honey. So long as the weather is good and there is a nectar flow, it is possible to use the size and vigour of the colony to do some housekeeping for you. It is a good time to replace any badly drawn, old and damaged comb in the brood nest. Take the old comb out and place new foundation at the edge of the brood nest. As long as there is a flow the bees will quickly draw it out and you will have a fresh frame for the queen to lay in. If there is no flow I usually like to remove the supers (so long as the colony is not too large) and feed with sugar solution. This will encourage the



bees to draw out the foundation, and within a week the feed can be removed and the supers replaced.

It is always better to have a few frames drawn each year to replace old and dirty frames when necessary or ready to use when you need to make a nucleus hive. This can be done by converting your hive into a double brood box. In effect putting a new brood box above the queen excluder as if it was a super. Use the natural flow or feed the bees and get the frames drawn as quickly as possible. Once the central frames have been drawn they can be moved to the sides of the box and the side frames put into the centre. Of course, once again this should be done without any supers on the hive so that you can be sure that none of the feed gets into the supers. Once the frames have been drawn they can be removed and stored (away from wax moth) and any nectar/ sugar solution in the frames extracted and fed back to the colony.

Dr Bee

New Product to Help Bees with Nosema



Colony Protection...Naturally
A Nutritional Supplement

NOSEMA seems to be a bigger problem with regard to the health of our hives than previously thought. As Dr Robert Paxton, of the Halle University in Germany, recently showed at the Apimondia 2012 Bee Health Conference in Dublin, the majority of hives in Europe have Nosema. Most beekeepers know that Nosema apis is damaging to the hive but not all are aware of the extent to which Nosema can weaken the colony.

Scientific studies have consistently shown that hives with Nosema tend to produce about 50% less brood and 50% less honey, and infected bees live about 50% shorter lives. The queens are also weakened. In addition to the problems associated with Nosema apis, beekeepers now have to contend with a new virulent disease, Nosema ceranae. Nosema ceranae is a distant cousin of Nosema apis but behaves quite differently. Firstly, it shows very few symptoms until it is too late to address the problem. Secondly, unlike N. apis, N. ceranae tends to be prevalent all year round. Recent studies have shown

that it takes 100 times less pesticide to kill ceranae infected bees than uninfected bees. There is also possible synergy between ceranae and viruses.

New Natural Product

Beekeepers are in real need for a product that can help control Nosema as this is the last year that Fumidil B will be available in the UK. A new natural product, HiveAlive™ was launched at Apimondia Dublin 2012 that may significantly help fill that space. HiveAlive™ is a nutritional supplement produced by Advance Science, a company based in the west of Ireland that works in collaboration with the National University of Ireland. HiveAlive™ is a blend of the old and new. The old being thymol, a natural anti-fungal extract of the thyme plant, which has been used since the 1940's by R.O.B Manley and has been shown to help bees with Nosema and also prevents syrup from fermenting. In HiveAlive™, thymol has been specially emulsified so as to ensure it mixes very easily into sugar syrup and does not cause separation or re-crystallisation which is a problem for beekeepers. The new element is a blend of Marine Bio-Active extracts. The exact details of which appear to be a closely guarded secret, some of which are only to be found off the west coast of Ireland. The marine extracts are specially prepared to ensure that all of their anti-fungal, anti-viral and anti-bacterial properties are maximised in the use of HiveAlive™.

Positive Feedback

Feedback from beekeepers using HiveAlive™ has been extremely positive, with very strong hives recorded



HiveAlive™

this Spring and one beekeeper noting zero over-winter losses out of 300 hives. Dr Grace McCormack, head of Zoology at the National University of Ireland has shown that these marine extracts kill Nosema spores which is very heartening for beekeepers. HiveAlive™ has also been scientifically tested in Europe, including the Bee Research Institute in the Czech Republic. Further validation is ongoing with the Agricultural Research Council in Italy, and Randy Oliver in the US.

Ease of Application

Another advantage of HiveAlive™ is the ease of application - it just needs to be added to your Autumn syrup. Advance Science says that the product will ensure healthier hives with stronger bees and more honey; we can all look forward to that.

www.AdvanceScience.com *



John Milton's Silver Medal

The BBKA was recently donated a silver medal that was awarded to John Milton in 1826. Gillian Hill was the kind donor in memory of her late father Walter Brunskill and his friend Mr I G Rankin. The Ceres medal was presented by the Society of Arts Commerce and Manufacturers for his invention of the double or revolving top bar hive.

The hive was constructed of a hollow cylindrical ring of the best unthreshed straw with a flat top supporting two circular boards both prepared with openings for four glass jars. To entice the bees the old plan of rubbing the inside of the hives with beer and sugar, or with honey was considered beneficial. On hiving the swarm the top board revolved to coincide with the openings of the bottom board, and the bees ascended to fill the glass jars. In a favourable season the jars were filled within twenty days containing eight pounds of honey and the process was repeated. The method required neither smoke or fumes nor the necessity to drive the bees, providing the very finest quality honey perfectly free from the young brood.

John Milton was a tea dealer and grocer and had a shop at number 175, The Strand, London, named the Apiarian Repository, which also sold hives and honey. He published two books *The*

London apiarian guide for beekeepers in 1823, just 21 pages long, and the *Practical Bee-keeper* in 1843 with 143 pages containing many quotations from bee books and a chronological list of writers.



John Milton's Silver Medal

There is an interesting anecdote of when W C Cotton went to New Zealand. He appears to have left some notes with Milton, who used them in his 1843 edition of the *Practical Bee-Keeper*. There was probably an argument on Cotton's return, as the notes were omitted from the later 1851 edition. Perhaps the argument was partly caused by Milton's reference to 'the direful effects of the use of the fungus puff ball'.

Martin Tovey,
BBKA President

References

British Bee Books. A Bibliography 1500–1976, IBRA Publications, 1979; ibrastore.org.uk.

Acknowledgements

I wish to thank Robert Hawker of Ponteland, Newcastle for his help in the preparation of this article.

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Disease Recognition

This best practice guide from the NBU is designed to help you identify both normal and abnormal brood during your regular hive inspections. Do remember to seek advice from an experienced beekeeper if you have any doubts about the health of your colony.

There are four distinct disease categories which may affect your bees:

- ❑ Varroosis — the effects of varroa.
- ❑ Brood diseases, which are evidenced by the appearance of the brood.
- ❑ Adult bee diseases, which are usually identified by behavioural indications.
- ❑ Viruses, which are difficult to identify but are usually associated with one or more of the other diseases.



Above: Normal, healthy brood including eggs, uncapped C-shaped pearly-white larvae and healthy, biscuit-coloured domed-capped brood laid in a regular, even pattern.

Learn to recognise what is normal and how normal bees behave — anything which is not normal should be investigated straight away. Refer to Fera's National Bee Unit brochure *Foul Brood Disease of Honey Bees* (this is available for downloading at www.nationalbeeunit.com).

Varroosis

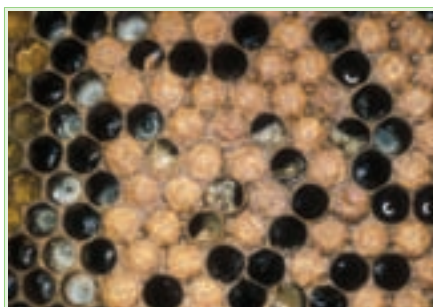
- ❑ Varroosis (the effects of varroa infestation) can have varied signs and symptoms. Bees may have stunted abdomens or deformed wings. There may be dead imago (adult) bees, often with the proboscis extended, on the point of emergence from cells. There may be rotting pupal remains in cells (similar in some cases to EFB).



Above: A bee with deformed wings, surrounded by varroa.

Brood diseases

- ❑ It is important to be able to see the brood in order to inspect it properly.



Above: The notifiable brood diseases, EFB and AFB. Top panel shows EFB infected comb, middle panel shows AFB infected comb and bottom panel shows the AFB rope test. Signs of both AFB and EFB may be sunken, concave or discoloured cappings; in EFB uncapped larvae may be lying in abnormal positions and AFB may result in perforated cappings.

Either move the bees by brushing gently with your hand or a goose wing, or shake them off the comb.

- ❑ Normal, healthy sealed brood has even, domed, biscuit coloured cappings with few holes in the pattern; healthy open brood has pearly white 'C' shaped larvae with clearly identifiable segmentation.
- ❑ Sunken, concave or discoloured cappings are a sign of American foul brood disease (AFB; photo opposite).
- ❑ Small perforations in cappings can be a sign of American foul brood disease. They can also indicate other diseases such as Sacbrood (a viral infection) or Chalk brood (a fungal infection).
- ❑ Larvae which are uncapped, discoloured (yellowish brown) and are lying in abnormal positions can be a sign of European foul brood (EFB; photo opposite) but may also result from Sacbrood or varroa infestation.
- ❑ Both European and American foul brood diseases are notifiable. This means that you must not move anything from the site. You should restrict the hive entrance to reduce the risk of robbing, clean your hive tool etc and



Above: Chalk brood, caused by a fungus. Signs to look for include (top panel) pearly white uncapped larvae, which appear to be lying in line with the cell and have a pointed appearance, hard white, grey or black pellets in cells and Chalk brood 'mummies' on the hive floor (bottom panel).



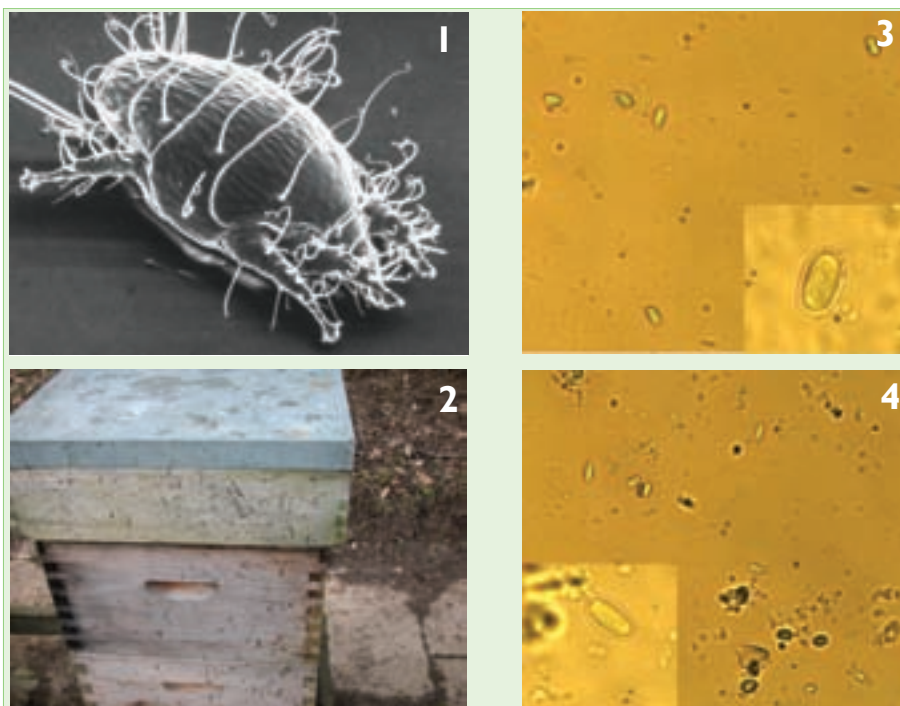
Above: Signs of Sacbrood, caused by a viral infection. Features to look for can have some similarities with early stage Chalk brood and include uncapped, pearly white cells that appear to be lying in line with the cell and may have a pointed appearance (right and middle panels). Cells may also show perforations. Right and left panels show side views of larvae with Sacbrood, which may have a 'Chinese slipper' appearance (right panel).

bee clothing, and then immediately notify your Appointed Bee Inspector.

- ❑ Uncapped larvae which, although pearly white appear to be lying in line with the cell and have a pointed appearance, can be a sign of early stages of either Chalk brood or Sacbrood.
- ❑ Hard white, black or greyish 'pellets' in cells may indicate Chalk brood.
- ❑ Uncapped cells with normal developing pupae exposed is a sign of Bald brood. This condition results from bees uncapping cells in which they apparently sense something is amiss; often the cause is wax moth larvae tunnelling under the cappings. This can sometimes show as a whitish line under the cappings.

Adult bee diseases

- ❑ Colonies which do not develop normally in the spring could be suffering from either nosemosis or acarapisosis.
- ❑ Signs of dysentery (faecal staining) on frame tops or faces or on the outside of the hive may also indicate nosemosis.



Above. 1: Acarine mite, responsible for acarapisosis. 2: A fecal-stained hive; a sign of dysentery. 3: Nosema ceranae and 4: Nosema apis, both viewed under a high power light microscope.



Above. 1–3: Wax moth infestation can be seen on the outside of the hive and causing devastation on hive combs.

4: Baldbrood. Here, cells with apparently normal pupae have been exposed by the colony bees. Although the reasons for uncapping may not be obvious to the beekeeper this will have happened because the bees have sensed that something is amiss. Sometimes this is caused by wax moth larvae tunnelling under the cappings, which may be seen as a whitish line.

- ❑ Identification of acarine requires a hand lens or low power microscope; identification of nosema can only be achieved using a higher power (x400) microscope.

Viruses

- ❑ Deformed wing virus is associated with varroa infestation and is characterised by bees having shrivelled or deformed wings.
- ❑ Paralysis viruses are characterised by large numbers of stationary bees with a shiny-black, hairless appearance, apparently 'shivering'.
- ❑ Other viruses may occur; signs are not readily observed and laboratory analysis is the only method of making a positive identification.

National Bee Unit, Best Practice Guide

All photographs are courtesy of The Food and Environment Research Agency (Fera), Crown Copyright; images supplied by the National Bee Unit at Fera.

Spring Convention 2012

We had never made it to the Spring Convention before: work and family commitments had somehow always got in the way, especially as it meant a long journey. This year, however, although we knew we would not be able to get there for the Members' Day on the Friday, we were determined to make it for part of the event — even though it is now an even longer drive for us!!

We answered the call for more Stewards to help on the Saturday, organised some white coats, booked a B & B and set off late on the Friday afternoon. Arrival at the B & B was the first test; despite saying, almost to the minute, what time we would turn up, the owner was not there, the door was answered by another guest who was expecting a Chinese takeaway! All was finally sorted, although our host was not happy that we asked for breakfast 15 minutes earlier than the normal starting time the next morning; we were warned it would be okay, provided we did not expect the same on Sunday! We had a private bathroom down the corridor — not explained when I booked — which was fine, just not quite so convenient at night when you realise there is no water in the kettle for your hot chocolate and you are ready for bed!

We got to Harper Adams University College shortly after 8.00am on the Saturday, donned the white coats and our Steward's badges and waited for further instruction. They came remarkably quickly as it had been discovered that there was a chance the credit card payment machines would not work in the Trade Hall as the previous day's storm had brought a mast down. So we were dispatched with a handful of pink slips to advise those in the queue waiting to collect tickets and/or pay for entry that there might be difficulties and that an extra cash machine facility had been set up on site. There were plenty of mixed reactions to the news; either it was potential disaster if people had come without much cash and no cheque book or it was of no importance to those with 'loads o' money!' The new technology turned out to be less of a problem than envisaged and, by the time we got a chance to look around the Trade Hall in the afternoon, there was plenty of legal tender of all sorts changing hands very smoothly.

The drinks and food we had on the day were of good quality and reasonably priced; so often at shows such as this with a captive audience, the refreshments are horrendously expensive and poor value, but not so here.

There was plenty to do as a Steward, especially in the early part

of the day — directing people to reception, courses, lectures, toilets and cafes in particular. The weather was kind until later in the afternoon which was fortunate as the site is quite spread out. We did not get the chance to attend any of the lectures or workshops ourselves but the feedback from other attendees was, without exception, positive. Whether it was a hands-on practical workshop, something more in-depth and scientific or an activity only loosely connected with beekeeping, I did not hear anyone saying they had not enjoyed it or gained from it.

That is not to say I did not hear complaints about other issues! Some felt the signage was not adequate, others failed to realise that they had to register and get their wristband first before queuing for the Trade Hall and

then there were occasions when some lecture rooms were not fully cleared before the next event; this meant not everyone who wanted to get in was able to do so. There will

be plenty of feedback, I am sure, when the organising team have their 'wash up' meeting in the next few weeks. So — now to the important questions....

How would I sum up my Spring Convention trip as a 'new-bee'?

It is BIG — immense, in fact. I expected lots of trade and special interest stands but not so many as there were on the day. There was a great atmosphere overall and it has to be a huge task of organisation, mainly by volunteers,

to put on such an event. There were bound to be teething troubles at a brand new venue, however diligent the organisers were, and I think, all in all, the whole thing was a friendly, professional, interesting and informative get-together. Could it have run more smoothly? Perhaps, at times, but let us not forget that this is a practical craft we are involved in and, while we want it to be a well run event for all levels, I do not believe we want a super-slick, highly regimented affair which loses a lot of its charm and informality.

What lessons would I pass on to prospective future attendees?

Get organised early. Register, pay and get your wristband beforehand then you will be free to enjoy it to the full. And, most certainly, get your accommodation sorted early too; there is lots of accommodation on site at Harper Adams! Above all, make the effort and go — do not put it off like we did. I would even recommend giving stewarding a try; it was good to be involved and see the operation first hand. Next year, though, the plan is to overindulge on lectures and workshops!!

Alice Hunter, Somerset BKA

Going Wild: Saving Seed, Saving Biodiversity Part I

Something which may strike a chord with beekeepers is the importance of the 'birds-and-the-bees' concerning plants (i.e. natural reproduction); bees and other pollinators being THE indispensable cog in the wheel of insect-pollinated plants. This symbiosis began many millions of years ago when the first flowering plants on earth somehow arrived at producing nectar to attract insects, mainly bees, who brush past pollen-bearing anthers to reach sweet nectar. Pollen sticks to hairs on the insect's legs and body. While the bee forages another flower it brushes past its sticky stigma, thereby pollinating that flower with a previous flower's pollen. The pollen grain then travels down a pollen tube to arrive in the ovule where it forms new seed which ripens after the flower fades, sometimes inside the juicy flesh of fruit (another clever evolutionary ploy by plants to entice animals to spread their seed) or inside dry pods, exploding spring mechanisms or burrs. Tirelessly bees have foraged since time immemorial from flower to flower collecting nectar and pollen, at the same time pollinating plants. This beautiful, natural fertilisation process of flowering plants has ensured the survival of both bees and plants.

The importance of seed

Each individual wild or natural seed of a 'species' has unique genetic material, enabling the species group to evolve and adapt to a changing environment. Some seedlings will survive while others will not. Unsuccessful seedlings might survive different environmental extremes but the prevailing condition will dictate which seedlings do survive to carry the genetic material forward. In this way, life on earth has survived, as explained by Charles Darwin's theory of evolution.

Playing God has caveats

The technique of hybridising plants artificially is a relatively recent one. With a mind like a curious, young child possessed of a new toy, modern man has created a bewildering array of flower forms and colours. For the most part it is just a bit of fun. Where vegetable hybridising is concerned, it has generated a wealth of wonderful varieties, which have enhanced the original wild forms to the point of being more delicious, larger, nutritious and also commercially viable. Sadly, UK law (Plant Varieties and Seeds Act 1964) banned the

sale of many heritage vegetable varieties (in favour of commercial seed producers' more uniform ones) meaning many of these are being lost. This is especially sad since these old varieties are/were also 'open-pollinated' (i.e. naturally, by insects in the field) unlike newly emerging modern hybrids.



Above: *Prunus avium* 'Plena' with double flowers (absent nectaries). Below: *Prunus avium*, the Wild Cherry (wild form) has lots of sweet-tasting nectar in contrast with the bitter-tasting flowers of the 'Plena' cultivar. Photos by Sarah Holdsworth.



Fun though it is to breed another novel cultivar or clone, it is painfully sad to see a favourite bee-forage plant reduced to a mass of showy, yet useless, double flowers. It is not just sad; it spells disaster for nearby pollinators, and disaster for the plant species' which need to reproduce by seed to ensure healthy gene-pools.

Heather *Calluna vulgaris*, which bees know and love, is the wild form species name, and now at least a hundred cultivars exist. These are some double-flowered *Calluna vulgaris* cultivars/hybrids to avoid: 'County Wicklow', 'Elsie Purnell', 'J.H. Hamilton', 'Kinlochruel', 'Peter Sparkes', 'Red Star' and 'Tib'.

Wild Cherry *Prunus avium*, an important native tree for bees, now has a cultivar *Prunus avium* 'Plena', another (useless) double-flowered form.

Jobs to do in June

- Remove weed from water features, and ensure there is always rope dangling or a half-submerged rock for bees to climb out.
- Water container plants, thoroughly in each session.
- Install drip irrigation lines to plants which suffer in drought.
- Last chance to sow annuals to flower this season.
- Last chance to plant out runner beans.
- Do NOT tidy nor cut back spring-flowering perennials: Their seed is just ripening and soon you will be able to save this seed.

Cultivars created from the species *Lavandula angustifolia* (lavenders), such as *Lavandula angustifolia* 'Twickel Purple', produce large individual inflorescences, which may be good forage. However, some beekeepers are of the opinion their bees choose species *Lavandula angustifolia* (Old English lavender) in favour of other cultivars or forms of lavender they grow in their gardens.

Note on reading plant labels:

Prunus denotes the genus, *avium* denotes the species, and all names which follow, such as: 'Plena', in inverted commas with capital initial letters, are always cultivars.

If we do buy cultivars, we need to assess their palatability to bees, and this is not easy to do; here I would recommend *The Bee Friendly Garden* by Ted Hooper and Mike Taylor. Surely, a regulation of plant breeding to ensure that 'cultivars' are acceptable to wildlife, should also be covered in the Plant Varieties and Seeds Act? In the meantime, I suggest it would be wise to stick with wild forms (i.e. species) of plants (which are also more disease resistant and usually hardier than cultivars).

A number one advantage of species over cultivars for us is that they can be sown from seed for free (with no reversions). And the thrill of seeing natural variations in each genetically unique plant within a group of one species, and knowing this will help the whole species survive into posterity, is absolutely magical. Next month I will explain how to save and store seed from species annuals, perennials, shrubs and trees, so you can start filling your garden with perfect bee plants.



Sarah Holdsworth
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Moving Frames Between Hives

There are times in every beekeeper's life when he/she needs to move bees between hives of different sizes, or when frames have been gifted that are incompatible with the existing hive. For those of you who have been in or are in this fortunate position, but are concerned about how to manage moving bees or incorporating frames of a different size to those in your hive, this article will help you get to grips with the procedures.

Many beekeepers are quite happy throughout their beekeeping life with the hive type and the frames that they started with but there can be occasions when bees have to be moved from one hive type or one frame type to another. Typically this might occur when taking on bees from another beekeeper or maybe when acquiring a nucleus on frames of a different size to those you use. At the Spring Convention, one couple reported that they had spent all of last season moving a nucleus from National frames to 14 x 12 frames only to find that the colony was, this year, dwindling rapidly with noseema while another beekeeper, new to our craft, told me of his disappointment that having chosen to purchase a Beehaus (before having any bees) he could now only find nuclei on National frames.

Some changes are fairly easy to achieve while others create untold problems. In general moving up a size is easy while downsizing will create more problems, particularly when trying to transfer from Langstroth or 14 x 12 frames to something else. Table 1 summarises issues associated with some of the most common frame sizes.

Box-to-box of the same size

Clearly, transferring from one box to another with the same size frames, for example when having purchased a nuc that

you want to move into a full size brood box, is the simplest procedure to undertake. In this case, it is best to move the 4, 5 or 6 nuc frames into a brood box and place an additional frame outside of the nuc frames at each side. Ideally this should be of drawn comb, but if you have none available then undrawn will suffice as long as there is a nectar flow at the time. Outside each of the new frames you should place a dummy board or move all of the frames to one side of the brood box and just use one dummy at the other side. Once these frames are drawn then repeat the process until you have a full brood box. If there is no nectar flow at the time, then a feeder with thin syrup (one part sugar to one part water) can be used, but this will not be successful if attempted outside of the normal season as there will be no young wax building bees in the colony. The strength of sugar syrup solution is critical as it needs to be such that the bees can immediately consume it (1:1 is close to the water:sugar balance that is ideal for immediate consumption) in order to activate their wax glands.

Frame-to-frame of different sizes

There are a few techniques which are useful to master if this is likely to be something you will need to do. In general these methods will be universally applicable and can be used for all frame sizes.

The first is a method I learnt many years ago from a very experienced beekeeper when we were recovering a swarm/wild colony from a tall (five metre plus) beech hedge. This swarm had been established for some time and had drawn about eight combs; six of which had brood on. After surveying the scene to establish the issues, we prepared a number of empty brood frames laid out on the floor on top of two strips of paper with masking tape long enough to wrap right around the frame from top to bottom (figure 1). While my colleague cut the combs from the hedge, I had the task of running up and down the ladder with them. My wife placed and trimmed the comb to fit the frames, wrapped the masking tape around them and then moved the frames into a brood box. Once the entire comb had been fitted to the empty frames, the brood box was moved home and left alone for a while. On inspection a week or so later, all of the masking tape had been chewed away and wax drawn to attach the comb to the frames.

The combs will, in all probability, not be perfect but having achieved the desired end (i.e. transfer from one frame size or wild comb to another frame size) new combs can be progressively introduced either side of the brood nest as described above. This method can also be used when moving from a larger comb size to a smaller one, but this may require cutting the reinforcing wires.

Table 1. Measures that may be needed when making transfers between hives or frames		
Donor hive/frame	Recipient hive/frame	Notes about transfers
National	14 x 12	No problem — just add new frames of the right depth
National	Smith	Lugs need to be cut down for frames to fit
National	Langstroth	Cut comb out of frame and fit it to new frame using masking tape
National	Commercial	Cut comb out of frame and fit it to new frame using masking tape
14x12*	National	Can be transferred but requires cutting comb from the frame and fitting it into the new frame or shook swarming
14x12*	Smith	
14x12*	Langstroth	
14x12*	Commercial	
Langstroth	National	Can be transferred but requires cutting comb from the frame and fitting it into the new frame or shook swarming
Langstroth	Smith	
Langstroth	14 x 12	
Langstroth	Commercial	

*Note that 14 x 12 also includes Dartington and Beehaus hives.

Shook swarming

The next method useful to know about is shook swarming as sometimes the old comb is not worth keeping and indeed could be a liability. There are restricted times of the year when this is best done, typically April to July, but these times are variable being subject to weather and nectar flow.

It is important to work with the weather rather than ignore it; activities must be carried out in context and the colony must have sufficient young wax building bees for this to be a success. Shook swarming is fairly simply achieved. It requires that the bees are shaken from their existing comb into the

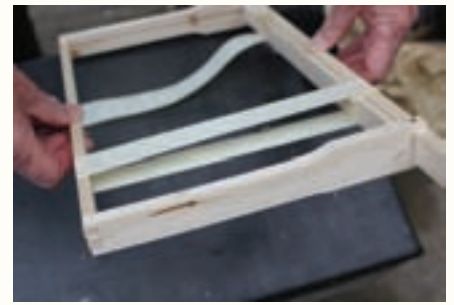
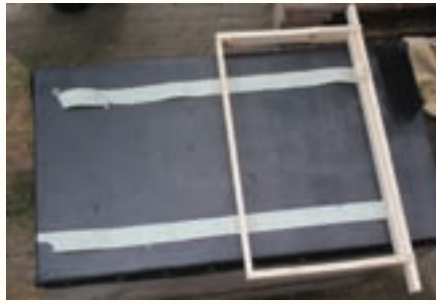
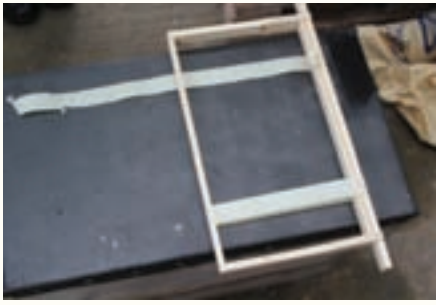


Figure 1. Transferring wax comb to an empty frame; cut the wax comb you wish to move to the size of the new frame and enclose it in the new frame by wrapping masking tape around the new frame as above. The bees will build wax between the wax comb and frame edges and chew away the masking tape. Photos by Ian Homer.

target brood box containing a full set of, ideally, newly drawn combs. To improve the chances of success it is common to place a queen excluder UNDER the new brood box for a few days as this will minimise the risk of the bees absconding before the queen establishes a new brood nest.

When shaking the bees into the new box, it is useful to first find the queen and place her safely in your breast pocket in a

do with them it is imperative that the varroa contained in the sealed brood is killed to prevent any re-infestation of your colony. This is best done by placing the combs in the freezer for about 48 hours. After a few days, sufficient comb should have been drawn for the queen to start laying and at this time the queen excluder can be removed from under the brood box. However, if on inspection there is no brood, leave the queen excluder in place for a few more days.

brood nest and allowing the bees to move upwards and start drawing this comb. I heard recently of one beekeeper who keeps a significant number of colonies, one of which is used permanently throughout the productive season to draw comb for use in other colonies. If you decide that this is the route you wish to go down, do make certain that the colony you use is, and remains, free of disease.



Figure 2. Shook swarming method of moving bees; remove 4-5 frames from the centre of a new brood box, lower a frame with the bees you wish to move into the gap diagonally, then holding the frame firmly by the lugs shake it using a sharp downward motion. The bees will lose their grip on the old frame and drop into the bottom of the new brood box. Repeat for all frames containing bees you wish to transfer. Finally, replace the 4-5 frames that were initially removed to create manipulation space. Photos by Ian Homer.

queen cage (cages put into trouser pockets are, because of movements, more prone to queen escape). It is not essential to find the queen, but I always feel more confident that the shook swarm will work if I actually see the queen go into the new brood box. Remove four or five frames (see figure 2) from the centre of the new brood box to create a gap large enough to lower the old frames into it diagonally. Holding the old frames firmly by the lugs, shake them one by one, using a downward movement which is sharply stopped to remove all of the bees. When all of the old frames are free of bees, fill the gap in the new brood box with the frames removed earlier and then release the queen between two of the frames with bees on. If nectar flow is uncertain, then addition of a feeder can sometimes help the young bees draw the new combs out. The old combs should be removed from the scene and dealt with in a solar extractor or some other wax recovery system; whatever you

Bailey comb change

Whatever method of transfer you choose, the task will almost certainly be made easier if you have some pre-drawn comb available. While it will have an impact on honey production, an effective way of doing this is to use the Bailey comb change concept. This involves placing a brood box with new undrawn foundation above your

I hope that these few words will give beekeepers confidence to move comb from one frame size to another if needed. It certainly should not be seen as an insurmountable problem and can, as with all beekeeping problems, be overcome with a little bit of thought and application.

Ian Homer, Dorset

Help! Hampton Court Palace Flower Show

3-8 July 2012

BBKA has once again been invited to exhibit at Hampton Court. This year's exhibit will be educational and interactive, featuring live bees and hive products. We will be joined by the Bumblebee Conservation Trust.

As in previous years, we need a number of volunteers to help man the stand. If you would like to help by working half a day in exchange for half a day free to enjoy the show please contact Tim Lovett at tjl@dermapharm.co.uk Please indicate the days on which you will be available.



Want to Know More About Bumblebees?

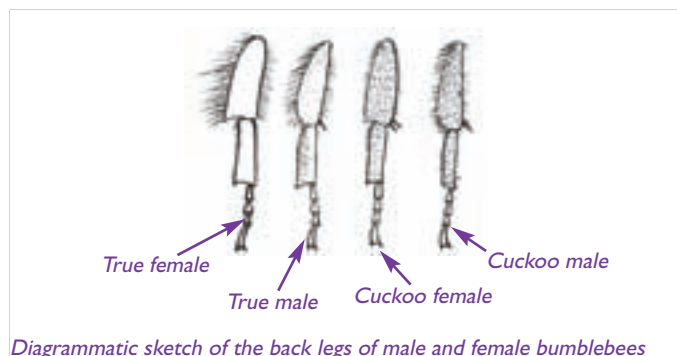
The following is a guide for those people who want to look more closely at bumblebees. It will help you to identify the fourteen bumblebee species most often seen in gardens or when walking in the countryside. Most can be identified from just the colour pattern. You can get a very close look at bumblebees as they visit flowers; they are quite trusting.

Key questions to ask

1. Is it a 'true' or a cuckoo bumblebee?

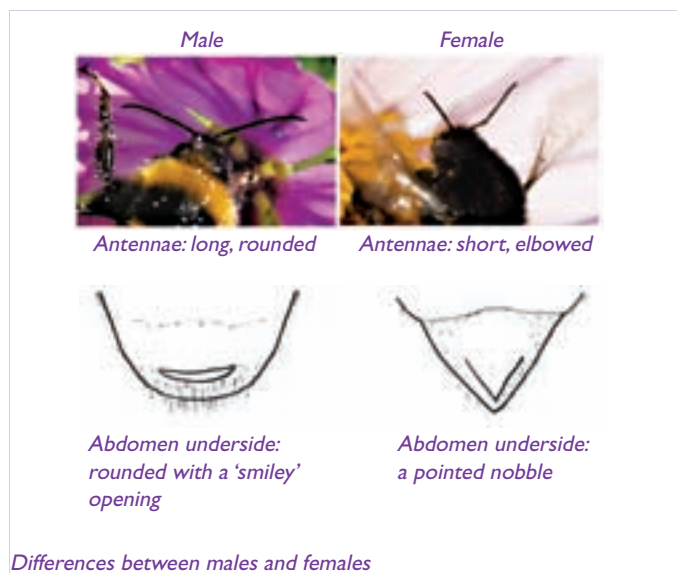
Look at the back legs. Cuckoo bumblebees stopped collecting pollen so long ago that they no longer have pollen baskets — just very hairy legs!

Female 'true' bumblebees have a conspicuous concave area with a shiny surface fringed by long hairs (or they are carrying a big ball of pollen). 'True' male legs look similar, but they have what you might describe as an incomplete basket, with a few hairs encroaching onto the surface.



2. Is it a male or a female?

There are several useful clues. Firstly, the shape of 'pollen baskets' can be useful to help identify true bumblebees (see above). Secondly, males have distinctive long antennae, which are easy to spot with a little practice and some species also have bright yellow faces. Thirdly, the males have a rounded tip to the abdomen



(especially when viewed from underneath). They sit lazily on flowers and do not collect pollen. The time of year can also be helpful — males, for example, become common in late summer and autumn. Females have less pronounced antennae, often with a visible 'elbow'. They have a pointed tip to the abdomen where the sting comes out. They fly busily around, and females of 'true' bumblebees can often be seen collecting pollen.

3. What colour is its tail?

This can be white (e.g. *Bombus terrestris* or *B. lucorum*), red or orange (e.g. *B. pratorum* or *B. lapidarius*) or buff — or the whole bee may be brown. If the tail is white, can you see a faint margin of buff hairs between the white and the black bands? The bee below has a white tail with a buff margin (arrowed). It is commonly known as the buff-tailed bumblebee, *B. terrestris*. Although this can sometimes be difficult to do in the field, if you look carefully, *B. terrestris* can be distinguished from the white-tailed bumblebee, *B. lucorum*, by its slightly darker and less 'lemon' yellow coloured bands along with the hint of buff at the tail margin.



4. What other bands can you see?

As you can see from the photo above *B. terrestris* has two yellow bands. One is at the front of the thorax and the other is part of the way down the abdomen. To help you identify bumblebee species you will need to look at the band colours carefully and count the number of bands. More examples of the common bumblebees found in gardens are shown in the illustrations on the following pages. Using these illustrations as a guide we hope that you will be able to identify many of the bumblebees you are likely to come across in the UK. The illustrations are mostly of queen bees, as workers generally have the same colour pattern but are smaller, except the buff-tailed bumblebee. Separate illustrations are shown for species in which the males are different from the females.

Rarer bumblebees that occur in gardens

Three of these species, ruderal, brown-banded carder and red-shanked bumblebee, are severely threatened and have declined greatly in abundance. In contrast the tree bumblebee is expanding its range northwards in the UK, having arrived on the south coast from France in 2001. The heath bumblebee is widespread, but often overlooked because it is small and superficially similar to the more common garden bumblebee.

Cuckoo bumblebees

In the UK there are six species of cuckoo bumblebees. These were once like other bumblebees, but they have switched to a parasitic existence. The females kill or evict the queen and take over her workers as their own, using them to rear their own offspring. If you live in the south of England, males of the southern cuckoo bumblebee can be among the most common bumblebees in July and August.

The Big Six – Common Bumblebees Found in Gardens

Buff-tailed bumblebee, *Bombus terrestris*

Queens very large and common in early spring. Workers have largely white tail, but usually with a hint of buff at the front margin. Yellow bands slightly darker/dirtier than in the white-tailed bumblebee.



Queen

Worker
(male similar)

White-tailed bumblebee, *Bombus lucorum*

A common bee, often nesting under garden sheds. Distinguished from the similar buff-tailed bumblebee by pure-white tails and lemon yellow bands.



Queen

Male

Early bumblebee, *Bombus pratorum*

A small bee, often nesting in tit-boxes. The yellow band on the abdomen is sometimes missing in females. Colonies are very short-lived, producing males as early as April. Rarely seen from July onwards.



Queen

Male

Red-tailed bumblebee, *Bombus lapidarius*

Very common on chalk downland, frequent in gardens. Distinguish from the much rarer red-shanked carder bee by black hairs of pollen basket on hind legs.



Queen

Male

Common carder bee, *Bombus pascuorum*

Abundant everywhere, the only common all-brown bumblebee. Can generally be distinguished from the much rarer brown-banded carder by the presence of some black hairs on the sides of the abdomen.



Queen

Garden bumblebee, *Bombus hortorum*

A very long-tongued species preferring deep flowers (e.g. foxgloves, Delphinium, honeysuckle). Distinguished from the generally smaller heath bumblebee by much longer face when viewed from the front.



Queen

Face

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Cuckoo Bumblebees

In the UK there are 6 species of cuckoo bumblebees (3 illustrated). These were once like other bumblebees, but they have switched to a parasitic existence. The females kill or evict the queen and take over her workers as their own, using them to rear their own offspring. If you live in the south of England, males of the southern cuckoo bumblebee can be among the most common bumblebees in July.

Southern cuckoo bumblebee, *Bombus vestalis*
Very common in the south of England, becoming rarer northwards. Attacks nests of buff-tailed bumblebees.

Forest cuckoo bumblebee, *Bombus sylvestris*
Widespread throughout UK. Attacks nests of early bumblebees. Males have distinctive reddish tip to abdomen.



Female



Female

Male



Female

Male

Field cuckoo bumblebee, *Bombus campestris*
Widespread and more abundant in the south. Attacks nests of common carder bees. Males sometimes entirely black, distinguished from male ruderal bumblebees (dark form) by much shorter face.

Below: The hind legs of male and female

'true' bumblebees and cuckoo bumblebees. Note that female 'true' bumblebees have pollen baskets (B) – a concave area on the hind leg that is surrounded by long hairs and is used to carry pollen. Cuckoo bumblebees do not have pollen baskets on their hind legs – the area is convex and covered in short hairs.



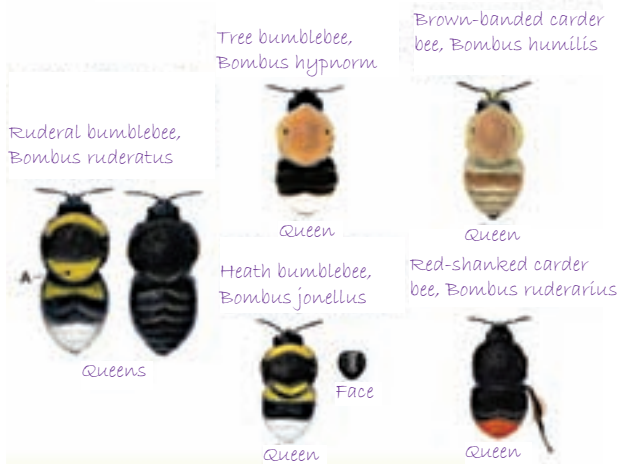
bumblebee

bumblebee

cuckoo

cuckoo

Rarer Garden Bumblebees



Ruderal bumblebee, *Bombus ruderalis*

Tree bumblebee, *Bombus hypnorum*

Brown-banded carder bee, *Bombus humilis*

Queen

Queen

Heath bumblebee, *Bombus jonellus*

Red-shanked carder bee, *Bombus ruderarius*

Queens

Face

Queen

Queen



If you would like to learn how to identify these, or learn more about the fascinating lives of bumblebees then why not join British Bumblebee Conservation Trust.

Bumblebee Conservation Trust,
www.bumblebeeconservation.org.uk

Submit your record!

Please help us to map the distributions of our rarer bumblebees. If you think you have found one of the more unusual or localised species then please submit the record to the Bumblebee Conservation Trust. All that is needed is a digital photo, date and postcode/grid ref. Records can be submitted via the online Beewatch system; it only takes a minute!

Still not found your bee?

There are a further ten species of bumblebee not illustrated here but which you might see if you visit some of the UK's wilder places.

Note: The illustrations provided in this article are to be used as a guide to help you identify those attractive bumblebees that you come across in your gardens or while out walking in the countryside. However, there are a couple of points that you may need to bear in mind:

- ❑ the first bumblebee workers of a colony can be very small
- ❑ towards the end of a bumblebee's life the hair colour can fade (especially if we have had a good spell of sunshine during the summer)
- ❑ the hair of a bumblebee's coat can become abraded showing the black surface underneath.

For more information about bumblebees and bumblebee identification, and to view photos of all of the UK's bumblebee species, visit www.bumblebeeconservation.org.uk

Bee Health and Immunity

The honey bee, being a social insect, has developed a fascinating immune system, one that encompasses both the individual bee and the colony as a whole. Recent articles have cited the fact that honey bees have only a third of the immune response-related genes compared to other species and that acquired immunity in bees is also less developed. But as a colony, bees have evolved some remarkable tactics to combat pathogens, some that even beekeepers may be able to help with.

Individual bees, like all insects, have an exoskeleton made of a thick cuticle. This is the first line of defence for bees against pathogen infiltration, similar in many respects to the function of our skin. Internally, with respect to the respiratory system, the low humidity within the bee's trachea restricts fungal spores from germinating. In addition, the bee's digestive system produces acidic secretions, which again help prevent successful pathogen proliferation. The peritrophic membrane in the digestive tract is also so impenetrable that viral particles have great difficulty in passing through. Added to this, like most species, bees have an array of friendly bacteria present in the gut that actively compete with other invasive bacteria or fungi. All these defences are what must be encountered even before the pathogen gains access to the haemolymph.



Bee with deformed wing virus infection. Photo by Jon Arul (above opposite).

Once in the haemolymph pathogens must still survive the cell-mediated and humorally-induced parts of the immune system. The former comprises cells that kill or 'eat' the pathogen, and the latter, antibodies that are produced specifically against that pathogen. These are systems very similar to that of other animals



including

humans, and this opens the door to idea that vaccines may be developed to prevent certain diseases within bees, just as they are used in us and other species.

Certain pathogens, such as nosema, attack epithelial cells of the mid gut. However, to gain access to that area and appropriately adhere to the epithelium, some other protective function of the bees immune system must have given way; either that or the nosema challenge was just too great. This has led to feed supplements being developed that produce a more resistant environment in the bee's gut against invasive organisms, and that boost the potential immune response against these pathogens. Bacteria, such as those responsible for American and European foul brood, target developing bee larvae that have not had the chance to develop comprehensive immune systems, but hygienic bees can sense dead or dying larvae and remove them effectively. When considering the colony as a super-organism, the bees' ability to remove diseased individuals is really a part of this super-organism's immune system.

The colony as a whole often makes up for a lot of the disease prevention that individual bees would not have been able to undertake effectively. The hive temperature is maintained within a range that is of most benefit to bees, thus reducing stress to any physiological functions. Bees often groom themselves; this is seen more so in the Asian honey bee, *Apis cerana*, and is one of the reasons that this species is less susceptible to varroa infestations. Propolis, honey, nectar and pollen all have antibacterial effects, and as such sterilise the bees' home to a large extent.

The ability of pathogens to bypass so many of these obstacles in bees and in other species is due to their increased ability to evade the immune system and cause damage. It is also more commonly due to a breakdown in one or many of the barriers of the bee's immune system. This is seen with varroa piercing the cuticle and spreading viruses directly into the haemolymph. This is also seen in stressed or weakened colonies developing nosema. So many factors can contribute to the health of the bee's immune system, from their genetics to their feed sources and the weather, and very importantly, management methods. As our understanding of the subject grows, so will our ability to combat and control bee diseases more effectively. For more information visit www.bee-vet.co.uk.

Jon Arul,
Bee Vets

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The Birds and the Bees, the Girls and the Boys

Most people have some idea what makes a girl a girl and a boy a boy. In humans, it depends on which sex chromosome you get from your dad. If the sperm that carried half your DNA had an X chromosome, you became a girl, if it carried a Y chromosome, you became a boy. Girls are XX, boys are XY. The same is true of most mammals and some insects. Birds, butterflies and many reptiles do it in reverse. The female has the mismatched pair of chromosomes (ZW) and the males are ZZ. But essentially the system is the same.

Bees do things very differently. To explain how, we need to backtrack a little, and deliver a very short lecture in genetics. Most animals are diploid; they have two copies of each chromosome. So humans all have 46 chromosomes, consisting of 23 pairs, including the sex chromosomes. Apart from the sex chromosomes, each pair of chromosomes carries the same genes — thousands of them, strung along each chromosome. But the two copies of each gene might not be identical; one might code for brown eyes, one for blue, for example. These different versions of a gene are known as alleles. To produce gametes, sperm or eggs, our cells undergo a special division called meiosis which results in sex cells each of which has, in addition to an X or a Y, just one copy of each paired chromosome.

Female bees, like humans, are diploid, having two copies of every chromosome. Like human females, queens produce eggs by meiosis. However, male bees are very peculiar, in that they have only half as much DNA; they are haploid, with just one copy of each chromosome. The sex of bees is actually determined by a single gene, the sex-determining locus. If a bee has just one copy, or two identical copies, it is male. If it has two different copies — two different alleles — it is female. There are usually a large number of different alleles at this locus, more than twenty in honey bees, so that, except in situations of inbreeding, it is very rare for an individual to be diploid, but end up with identical copies. Such individuals develop as males, but are usually sterile. In honey bees the house bees destroy these diploid drones soon after they emerge from the egg.

Bees, and other Hymenoptera which share this system of sex determination, are said to be haplodiploid. This has all sorts of bizarre implications, which ultimately explain why bees evolved to be social. For a start, it means that unmated females can lay eggs, which will hatch to produce males. So a mated female bee can control the sex of her offspring; if she lays an unfertilised egg it will be male, whereas if she allows an egg to be fertilised, using the



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sperm stores inside her, then it becomes female. Another odd consequence is that male bees have no fathers.

Perhaps the most significant aspect of this strange system is that it renders sister bees of each 'patriline' unusually closely related to one another. A virgin honey bee queen typically mates with fifteen to twenty drones, creating that number of patrilines of full sisters. The sperm from an individual male bee are all identical, since he has only one copy of each chromosome. This means that all members of one patriline inherit identical genes from their father. The other 50% of their DNA comes from their mother, and for every allele that they receive from her there is a 50:50 chance that their sister will get the same one. Overall, patrilinear sisters share 75% of their DNA by descent, compared to sister humans, or birds, or butterflies who share 50% of their DNA. Queen bees are 50% related to their diploid offspring — they pass half their DNA to them. This means that a queen is more closely related to the sisters of her patriline than she is to her own offspring. This, in a nutshell, is the explanation for sociality in bees, ants and wasps.

Imagine you are a larval female honey bee. You could be caused to develop into a queen, fly off into the big wide world and try to find a mate, then rear offspring of your own. Or you could develop as a worker, stay with your mother, and help her rear your sisters. Your full sisters carry more DNA identical to your own than your offspring would, so all else being equal, if you had any choice in the matter and wanted to ensure your DNA is represented in future generations, your best bet would be to become a worker and stay with your mum. In terms of 'the selfish gene' hypothesis, you replicate 'your' genes better by helping produce sisters than daughters. Indeed recent observations suggest that house bees

even favour their own full sisters over their half sisters.

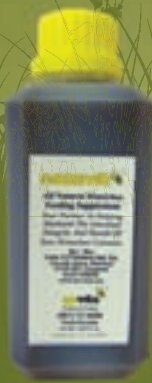
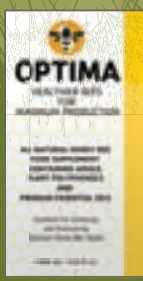
This is considered to be why sterile worker castes have evolved at least eleven times in the Hymenoptera, and very rarely elsewhere in the animal kingdom (termites being a notable exception). The selfish gene argument may initially seem less convincing with respect to honey bees than with some Hymenopterans, as a honey bee queen can probably lay more eggs in a day than the number of young bees that could be cared for by a worker bee in her entire lifetime. The emphasis in the bee hive is on maintaining a massive work force that can collect sufficient stores to maintain its queen's genome through adverse conditions. Moreover, the course of events we see these days in honey bee colonies was probably laid down fifty million or more years ago, when the roles of the two female castes were far less polarised. Because it was a successfully balanced system, evolutionary forces would then have exaggerated their specialisation in alternative directions.

Ultimately, their odd genetics has helped bees, ants and wasps towards a lifestyle which has proved to be enormously successful; the advantages that accrue from division of labour between castes have allowed them to become among the most numerous organisms on earth.

Professor Dave Goulson,
School of Biological & Environmental Sciences,
University of Stirling,
Dr Dorian Pritchard,
Former Lecturer in Human Genetics,
University of Newcastle

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Clipping your Queen may Help you Retain your Colony

'A Swarm of Bees in May is Worth a Load of Hay' the saying goes, but not if you let it fly away! On Tuesday 1 May 2012, at 1 pm, I became aware of the emergence of a prime swarm issuing from one of my hives, thus creating a veritable 'bee-cloud'. A few early queen cells had been culled at an inspection on 21 April and an empty super of drawn combs placed above a queen excluder. However, probably due to the persistent wet and cold weather, foraging possibilities were severely restricted and the bees refused to enter the super, regardless of crowding in the brood box. The queen had been home-reared and mated in the summer of 2011, and I had clipped her wings and marked the thorax with white paint.

Clipping both wings is tidier as it leaves the queen evenly balanced and retains bilateral symmetry. This is aerodynamically neutral, meaning that the queen cannot fly at all. Upon attempted swarming, she drops passively to the ground, near to the hive entrance, and if marked, is readily spotted and retrieved. Clipping just one wing is less than satisfactory, since the queen retains limited, yet distorted flight capability, and may spiral off several yards from the hive and become lost.

I always clip and mark my mated, laying queens as part of the same manoeuvre. Ungloved, I gently grip the queen's thorax between the thumb and forefinger of the left hand, being careful not to squash her. With the right hand I use sharp scissors to make a horizontal snip through both wings, leaving about one third of each wing *in situ*. It is, of course, essential not to cut off any of the legs while trimming the wings. I then immediately mark the dorsal thorax of the clipped queen with the appropriately coloured paint: Yellow for 2012-bred queens. The newly clipped, marked queen is then re-introduced into her colony, using a cage, similar to that in Figure 1. These actions enabled me to retain the unexpected May Day swarm. The following is a photographic and written record of the swarm control management techniques I employed.



Figure 1. Marked and clipped queen before introduction into the colony using a cage. Photos by Paul Abbott.

Beekeepers who do not wish to randomly lose bees and honey crop may use one or more of many techniques for swarm control. Most procedures simulate swarming to suppress and redirect the innate reproductive drive of *Apis mellifera*. These methods also minimise the potential public nuisance caused by the production of multiple secondary swarms or casts and allow the apiarist to selectively increase his/her colonies.

In theory, when the wings of a queen are clipped a swarm may issue, but due to the queen's inability to fly the swarm will take to the air and may settle nearby. However, the flightless queen falls to the ground outside the hive. The frustrated flying workers have no other choice, but to return home in search of 'mum'. Even though this is not a swarm prevention technique, it is an effective and effortless method of swarm retrieval.

On this occasion my bees had read the text books, and promptly returned to and covered the outside front wall of the National hive in a good tempered, frenzied fashion. Because the queen was marked I quickly spotted her on vegetation on the ground near the entrance, surrounded by a small retinue of attentive workers (see Figure 2). I then used a plastic queen catcher to secure the queen with worker attendants while I prepared spare hive parts for an 'artificial swarm' manoeuvre. The brood chamber was thoroughly examined, and as expected one newly sealed queen cell was discovered, together with several uncapped queen cells (shown in Figure 3).

A single frame of brood, mostly sealed, but in all stages of development, without queen cells was removed from the hive and



Figure 2. Marked and clipped queen spotted on ground beneath hive.



Figure 3. Newly sealed queen cell (circled in red) discovered along with several uncapped queen cells.

placed in the centre of an empty brood box flanked by deep frames of foundation, apart from drawn combs adjacent to the lateral walls. The trapped queen was then gently transferred alone, into a plastic 'JZ BZ' queen introductory cage, and its exit was sealed with candy. As shown in Figure 4, this cage was then pushed into the face of the brood-containing comb. This queen-holding frame in its new brood box with empty drawn frames and foundation was placed on a base on the same location as the old hive.

The remaining brood box without the queen, but containing most of the brood and a few queen cells, was sited adjacent to, and behind the queen-containing hive, with the entrance facing at right angles to the other colony. This manipulation results in foraging bees returning to the laying queen on the original site. This replicates the redistribution of bees as it occurs in a swarm. Most of the older flying, foraging bees are with the laying queen, but with minimal brood and no queen cells. Meanwhile the younger nurse



Figure 4. The queen, in a plastic 'JZ BZ' queen introductory cage pushed into the face of the brood-containing comb.

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Figure 5. The queen-holding brood box adjacent to and at right angles to the old brood box with its remaining brood and a few queen cells.

bees are with the brood on the new site, and as they develop they in turn become foragers.

The queen-right colony was fed a gallon of sugar syrup to stimulate egg laying and wax secretion for comb building in the frames of foundation. Likewise, the brood containing colony had a block of candy placed above the brood nest to ensure adequate food for continued brood rearing. No supers have been placed yet, but sufficient feeding will be undertaken over the next couple of weeks to ensure the healthy development of both colonies, until the weather improves and honey flows eventually result.

Six days after the artificial swarm procedure, I shall examine the queen-right stock to check that the clipped, marked 2011 queen is back in full lay, that there are no new queen cells, and that comb drawing is in progress. The swarming impulse should now have been fully extinguished.

At the same time, I shall carefully look through the queen cell containing colony and cull all queen cells, apart from one sealed cell. I shall allow the virgin queen to hatch, and wait for mating. This may be unsuccessful due to inclement weather and a lack in numbers of sexually mature drones early in the breeding season.

If mating is successful, then I shall probably form a small nucleus stock using the 2011 queen, prior to uniting the two divided colonies, using the newspaper method. Thus I shall have achieved colony increase, and re-queening with a 2012 replacement. This new queen will subsequently be wing clipped and marked on the thorax with yellow paint.

The moral of the story, when it comes to queen bee management and swarm retention, is: Mark and wing clip her, or risk losing her!

Paul F Abbott, Southend-on-Sea Division of Essex BKA and Sevenoaks & Tunbridge Wells, Kent BKA

The Random Apiary Survey Findings

Background

To get an accurate estimate of the prevalence of honey bee brood diseases and to monitor pathogens, including up-and-coming species, in adult bees, in 2009 the Department for Environment, Food and Rural Affairs (Defra) and the Welsh Government (WG) commissioned a two-year survey of apiaries across England and Wales. Beekeepers may well have read progress reports about this two-year Random Apiary Survey (RAS) in recent beekeeping publications, heard about it at association meetings, or may even have provided samples if your apiary was one of those selected within the survey. Before looking at the RAS results in more detail and how they compare with the data routinely gathered by the National Bee Unit's (NBU's) inspectors, it is helpful to understand a little more about how NBU inspectors currently operate.

Existing risk-based surveillance

The aim of the NBU is to detect and control notifiable pests and diseases as quickly as possible, but it is unfeasible for us to inspect every colony in every apiary each year. The inspection programme undertaken by the NBU is thus 'risk-based', which means that we concentrate our inspection efforts on apiaries according to previous pest and disease incidence in a given area and the proximity of apiaries to sites where exotic honey bee pest



Figure 1. An NBU inspector at work. All photos are courtesy of The Food and Environment Research Agency (Fera), Crown Copyright; images supplied by the National Bee Unit at Fera.

incursions are most likely to occur. NBU inspectors do not, therefore, just wander around the landscape looking for honey bee diseases; they target areas known to be at risk as part of a priority inspection programme. Although by working in this way we typically achieve 7,000 apiary visits (about 38,000 colonies) each year, the problem is that certain areas may not be visited

at all because they are deemed to be 'low risk'. Herein lies the beginning of a Catch 22 situation: NBU inspectors do not visit an area because it has no history of pests and diseases and is low risk; then the same area might never be visited and pests and diseases, even if they are present, are unlikely to be discovered unless beekeepers spot and report the disease to us (as they are legally

required to do)! This exposes a gap in our knowledge when it comes to the prevalence of pests and diseases, which cannot be solved by our existing inspection programme. So, to answer detailed questions about the prevalence of foul broods and also the emergence of potentially damaging pathogens in adult bees, the NBU needed to do something different. Hence the RAS was born: the largest apiary survey undertaken anywhere in the world.

The basis of the RAS

The idea of the RAS was to dispatch our NBU inspectors to apiaries from across England and Wales over a two year period to provide random coverage of all eight beekeeping regions; a geographical area totalling over 150,000km². While visiting the apiary, they would inspect colonies for the presence of the damaging brood diseases American and European foul brood (AFB and EFB), record colony condition and also collect a sample of adult bees with which to complete a pest and pathogen screen back in the Food and Environment Research Agency's (Fera's) high tech molecular diagnostic laboratories in North Yorkshire. Thankfully AFB is a rare disease in England and Wales, but this represented a challenge for the survey because we had to make sure that we sampled a very large number of apiaries to stand a chance of finding just one case. In fact the rarity of AFB was the main driver for the scale of the survey. The full list of fourteen pests and pathogens for which we screened is presented in Table 1. The incidence of high levels of varroa was also noted and reported as part of the survey.

Did the survey provide a clear picture of disease?

For the purposes of the RAS the NBU inspectors made slightly more visits in the first year than they did in the second, in total inspecting more than 19,000 colonies by the time the survey was complete. Figure 2 shows the geographical spread of visits, and it is important to note that, overall, these were evenly distributed across England and Wales and two beekeeping years, and not concentrated in areas of high disease risk. Have a look at Figure 3, which zooms in on a small part of the map.



Figure 2. Distribution of the RAS visits 2009-2011. Red, Amber and Green colours indicate the disease risk status of apiaries prior to the visit (high, medium or low respectively).

Table 1. The range of honey bee pests and pathogens screened within RAS

Pathogens

Nosema apis
Nosema ceranae
Melissococcus plutonius (EFB)
Paenibacillus larvae (AFB)

Pests

Acarapis spp (Tracheal mites)
Varroa



Viruses

Black queen cell virus (BQCV)
Kashmir bee virus (KBV)
Sacbrood virus (SBV)
Acute bee paralysis virus (ABPV)
Deformed wing virus (DWV)
Chronic bee paralysis virus (CBPV)
Israeli acute paralysis virus (IAPV)
Slow paralysis virus (SPV)

This allows us to make a more detailed comparison between the distribution of inspections completed as part of the risk-based and RAS programmes respectively within a single beekeeping region. You should be able to see how the black (risk-based) dots are much more clumped together, whereas the grey (RAS) dots are well spread out. This shows us that during the RAS, inspectors made visits to apiaries that they would not normally go to during their routine



Figure 3. Distribution of inspections completed as part of the risk-based (black dots) and random (grey dots) programmes within a single geographical region.

surveillance activities, providing reassurance that the RAS achieved a sufficient number of random inspections to provide reliable disease estimates.

The results

What was the incidence of foul brood disease?

Brood disease prevalence across England and Wales, was 1 in 400 apiaries (0.25%) for American foul brood and 1 in 80 apiaries (1.25%) for European foul brood.

How did RAS and NBU risk-based inspections for foul brood compare?

Reassuringly it is good to note that, the NBU risk-based inspections detected far more foul brood disease compared to the RAS inspections. The data suggest that risk-based inspections are 1.5 to 3 times more efficient at finding AFB and 3 to 4 times more efficient at finding EFB compared to random inspections.

Was foul brood disease found in unexpected places?

Not only was less foul brood disease found in the RAS inspections, but most was located in areas that the NBU had already identified as high risk. Very little disease was found in apiaries that were thought to be at low risk of having foul brood. These results demonstrate that the NBU's current understanding of which apiaries in England and Wales are at risk from foul brood is sound.

At this point it is important to remember that this knowledge of risk is based on the quality of information that we have within



BeeBase, the database of beekeeping statistics for England, Wales and Scotland. We rely on the great cooperation we get from beekeepers signing up to BeeBase and on beekeepers reporting suspect symptoms of foul brood diseases to us so that we can work together to tackle outbreaks quickly and effectively.

If you have not already done so, you can sign up online at: www.nationalbeeunit.com. Alternatively you can sign up by email at: nbu@fera.gsi.gov.uk, or by telephoning our offices on 01904 462510. You will be joining 26,000 other registered beekeepers (over 7,000 of whom signed up since the start of the RAS) and you will be making a really positive contribution to the collective health of our national honey bee stocks.

Are apiary risk ratings useful for finding foul brood disease?

The risk-based inspection programme currently allocates high (red), medium (amber) and low (green) risk classes to every known apiary, even before a visit takes place. NBU inspectors prioritise visits to the highest risk sites before visiting other lower risk sites. It was possible to look at all disease 'hits' found during the risk-based apiary visits, to see whether more disease was being found in higher risk apiaries. Interestingly, AFB was found at 1 in 100 high risk, 1 in 300 at medium risk, and 1 in 600 at low risk apiaries. Similarly, EFB was found at 1 in 16 high risk, 1 in 70 medium risk and 1 in 200 low risk apiaries. It is reassuring to know that these results suggest that the apiary risk classes used by the NBU are useful for targeting disease.

What about the prevalence of emerging pathogens in adult bees?

There has been much worry among beekeepers concerning emerging pathogens in recent years. These include Kashmir bee and Israeli acute paralysis viruses (KBV and IAPV), which have been suggested as risk indicators of Colony Collapse Disorder (CCD) in the United States. Also, *Nosema ceranae*, an Asian variant of the resident *Nosema apis*, has been linked to large scale colony losses in Spain and Portugal. The good news is that KBV and IAPV were very seldom found in the adult bee samples collected from each apiary visit within the RAS. To give you an idea of proportion, the size of each word presented in Figure 4 represents the relative prevalence of any particular pest or pathogen as detected in the RAS. KBV and IAPV were in fact so rare that they can hardly be seen in this Word Cloud. These are circled in red in Figure 4 below. It is a different

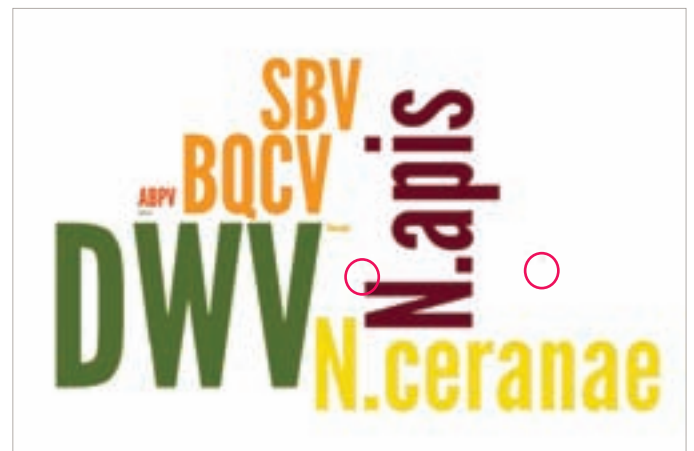


Figure 4. Word Cloud to illustrate the relative prevalence of pathogens (excluding varroa) screened within the RAS.

story, however, when it comes to the prevalence of *N. ceranae*: this was found to be very well distributed across England and Wales, with more than one third of apiaries testing positive (see Figure 5).

Do we know how pathogen prevalence may link to outbreak of disease?

While the RAS data presented in Figure 4 illustrates the relative prevalence of the different pests and diseases covered by the RAS, it does not provide the same insight into their respective relative impacts. If we were to draw a similar Word Cloud to illustrate the major players in terms of poor colony health the picture would probably be very different. For example, even though the RAS found that *N. ceranae* was very common (and hence appears in large letters in Figure 4) we also know, from subsequent analysis of our data, that the presence of this microsporidial parasite is not consistently linked to poor colony health.



Managing live bees at Shows

General points:

This leaflet is one of a series intended to help beekeepers and non-beekeepers. If you believe the contents of this leaflet are relevant to you, please seek further advice from an experienced beekeeper or your tutor.

Information is updated regularly – please check with the BBKA web site at: www.bbka.org.uk – for the latest information.

This leaflet supersedes 'Managing Live Bees at Shows' (BS 2006 3rd edition)

Note: The same information is published in our data sheet L005 available to download from the BBKA web site.

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- Ensure the conduit exit is well above head height or is suitably screened.
- The hive ventilator must be resistant to mischievous probing.
- A beekeeper should be present at all times when the public is nearby.
- Closing screens must be available in case of an accident such as broken observation panels or a damaged ventilator. A large sheet can be used to wrap up the whole hive.
- A spray bottle of soapy water should be available.
- The beekeeper in charge should ensure that the hive does not overheat, especially if the bees are not allowed to fly.

Risk Assessment

Organizers are advised to do a written risk assessment of the event, identifying hazards and the steps taken to minimize them and their outcomes.

The Health and Safety Executive has produced a very helpful leaflet – 'Five Steps to Risk Assessment' – available from the Environmental Health Department of your District Council or <http://www.hse.gov.uk/pubns/lindg163.pdf>



After the event

Assess what went wrong and what went right. Make notes for future events and update any briefing or guidance notes. If any helpers proved to be unsuitable they should be told what was wrong with a view to improvement for the future.

This leaflet is a guide for the safe management of live bees used for demonstrations to the public, either in full sized or observation hives.

Preparation before the show

- Appoint one person to have overall control and responsibility for the event. This should ensure that nothing is missed.
- Read the terms and conditions of the show.
- Inspect the proposed site with the show organizer and ensure that it is suitable. Where bees are free flying you should avoid other activities such as children's play areas, tethered animals, footpaths, car parks, etc.
- Agree the maximum number of colonies to be placed on the site.



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- Check that there is adequate insurance cover, either through the beekeeping association or through the BBKA.
- Select a source of suitable colonies and a backup.
- Select a team of competent bee handlers to inspect the bees and a knowledgeable person to give the commentary. Make sure the owners of the bees are happy with the selected demonstrators handling their bees.
- Brief all participants. A guidance sheet can be useful and emailed to everyone.
- Any protective clothing that is worn should be clean to create a good impression.

Preparation of a colony

- Select healthy and docile colonies that are well provisioned. They should have brood in all stages and preferably a marked queen. There should be no active queen cells
- Inspect the colonies for AFB and EFB about a week in advance.
- Ensure that the hive is of good, sound construction and is secure and well ventilated for travel.
- Bleed off the flying bees by moving the hive within the apiary 2-3 days prior to removal to the show. Allow longer if the weather is poor for flying. If there is no adjacent stock to take the flying bees, place a weak stock on the original stand. An alternative is to gradually move the selected colony next to another, then move it 3m or more away.

Preparation of the site

- There should be a screened area large enough to contain the hive(s) when dismantled and give the demonstrator space to work unhindered.
- The screen should be erected before the bees are released and should be a minimum of 2m high. It should be secured against casual entry by the public.
- The bees should be flying on site at least 24 hours prior to public access.
- Avoid any danger of robbing (which will put the bees into a defensive state) by restricting the entrance at all times. If other bees are present or wasps are prevalent it may be wise to use cover cloths when demonstrating, but this should be a last resort.
- Ensure that adequate beekeeping equipment is available at the demonstration site at all times and in particular spare smoker fuel.
- Put up a sign in a prominent place **'Caution – Live Bees'**

Dealing with a medical emergency

- Read BBKA leaflet L002 'Bee Stings' before the event. Keep it available in case it is needed. There is a separate sheet L002A with a summary of actions.
- If emergency medical personnel are available at the show, they should be briefed in advance as to when and where the demonstrations will be held. This should be done in conjunction with the show organizer.
- Establish an agreed means of summoning help should medical assistance be required urgently. Mobile phones should be fully charged and a check made on signal strength.
- If medical assistance is available they should take the lead in managing the patient. An ambulance should be called to a medical emergency unless it is deemed unnecessary by professional personnel at the scene.
- When medical assistance is not readily available dial "999" and ask for an ambulance.

Demonstrating

- When more than one stock is present, the demonstration should be carried out on only one colony at a time and demonstrators should alternate the stocks used unless there is an overriding reason not to do so.
- All equipment should be made ready before the demonstrations. A soapy water sprayer should be placed in the screened area for use in emergencies.



- A demonstrating team should be appointed with a leader. One should be outside the screened area to deal with the public and the possibility of stings.
- Observe conditions (including weather) both inside and outside the screened area and terminate the demonstration if necessary. It is easy for a demonstrator who is concentrating on the colony to miss warning signs of agitation. This may be of little consequence in an apiary but could be catastrophic when the public is present.
- If possible the demonstrator should not wear gloves, unless disposable ones for hygiene reasons. This ensures that the first signs of agitation are felt.
- In the event of a colony becoming over defensive, close it up completely (suffocation of the bees is not a consideration). Simultaneously, clear the public from the area. Use soapy water spray to destroy bees returning to the hive and remove the colony or colonies as soon as possible from the site.
- Don't keep the bees open too long. 15-20 minutes should be adequate, with at least an hour between demonstrations.

Removal

Prepare the hive(s) for travelling. Leave the bees until the evening and after the public has left the site. Try to ensure that all flying bees have returned to the hive(s) before closing the entrance(s) and removing from the site.

Observation Hives

Many of the foregoing considerations apply to the management of observation hives at shows.

In addition:-

- When preparing a nucleus box type observation hive, ensure bees have not collected on the screen under the body of the hive before moving.
- An observation hive should be setup in shade and in a manner where there is no danger of it being knocked over, but with free access to both sides.
- The hive should be in good condition with adequate ventilation. It should have a facility where water can be dribbled or sprayed onto the bees to cool them. Clean water should be available at all times.
- Observation panels should be toughened glass or plastic, not standard glass which may break.
- Ensure that the conduits (for flight access) are secured against upset and dislocation.



General points:

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Information is updated regularly – please check with the BBKA web site at: www.bbka.org.uk – for the latest information.

This leaflet supersedes 'Collecting a Swarm' (B4 2009 4th edition)

Note: The same information is published in our data sheet L004 available to download from the BBKA web site.

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- hours until they build a little wax. This should help make it more attractive to the bees in future.
- If it is difficult to get a swarm into a skep then lay a comb that has had brood in as close as you can to the bees. This should attract some of the bees onto the comb which can be shaken into the skep. This can be repeated and it may be possible to place the skep close enough for the fanning bees to call the others into it.
- If possible it is always advisable to cage the queen. This will make collection easier and may prevent absconding. It is quite common when there are virgin queens in a swarm for there to be several.
- Place the skep on the sheet, raised at one side by about 50-100 mm and leave until the remaining bees in the cluster and the flying scout bees have followed the queen into the skep. This might well be later in the day or early evening and could require another visit.
- Tie the sheet over the skep to make it bee-tight and remove to your vehicle.
- Bees will suffocate quite quickly, so make sure they have ventilation and are not sealed

Disposal and hiving

When hiving swarms certain precautions should be observed and although in general they are quite healthy there is a chance a swarm could have come from a colony infected with foul brood. For that reason the following is advisable:-

- Hive it on foundation, not on comb.
- Don't feed it for at least 4 days and only then if it needs it.
- There is often no need to feed at all.
- If hived near other bees, then isolate it by as much distance as you can. If space is tight face the entrance in the opposite direction to the nearest hive.
- Check for both foul broods AFB and EFB after 3 weeks and again a few weeks later. If clear then gradually move to the intended destination where it can be treated the same as other colonies.

If the swarm came from a colony infected with foul brood it may have brought infected honey with it. Hiving on foundation will ensure this honey is used to make wax to draw the foundation out instead of storing it in comb that might continue the infection. In these circumstances it may seem unnecessary to isolate it, but it is an additional precaution.

Manage all colonies in your apiary responsibly to reduce the incidence of swarming and so reduce the need for future swarm collection by yourself or someone else (see the BBKA Advisory leaflet L003 'Swarm Control for the beginner').

Beekeepers are frequently asked to remove swarms, but before doing so, bear in mind there is no standard situation, they should all be treated individually.

Before putting your name on a "swarm list" please make sure you are prepared to collect them throughout the season, not just taking enough swarms to satisfy your own needs, then not bothering about other requests. It is annoying to callers and puts pressure on responsible beekeepers who are prepared to collect swarms, often when they have no need for them.

In the text below "skep" should be taken to mean whatever is used to collect the swarm. Usual substitutes could be a wooden or cardboard box.



BBKA - supporting bees and beekeepers

Preparation

Keep all the equipment you are likely to need handy so you can respond to a call quickly.

You are likely to be dealing with non-beekeepers who may know very little about honey bees or the possible alternatives. They may be calm and responsive to suggestions of what they can do until you arrive, or they may be in a panic in which case they may not give you the right information or may not behave in a rational way. Careful questioning often reveals that the call is not for a swarm of honey bees at all.

It makes sense to fully understand the swarming process and how bees will react to different circumstances. This will help you take swarms with minimal problems. Study the alternatives to honey bees, their life cycles and identification. 'Swarm calls' are often bumblebees, solitary bees, wasps, hornets or hover flies. You won't be able to give much advice if you know nothing about them.

A web-search will give you a lot of information and it might be possible to make a list of websites you can suggest the caller visits. Do this in the early spring every year in case websites change, as they often do.

It may be helpful for local BKAs to have a page on their websites to help the general public to deal with swarms.

Initial Contact

Many callers may have never experienced a swarm of bees before, they may panic and not give you the correct information. Gain enough information to be sure you are dealing with a swarm of honey bees. To do this you may need to ask the following questions:-

- The address/location and postcode of the swarm and the 'phone number of the owner/occupier. If the swarm is some distance away, try to give the name of a more local beekeeper.
- How big is the swarm? The description of the size of the cluster (e.g. football, tennis ball, golf ball) will be useful. Asking what size it is often results in an answer of 'massive' or 'huge' which isn't helpful. Remember it is only honey bees that swarm.
- What is the height and position of the cluster? Again, a description is useful (e.g. door, bedroom window etc).
- Will a ladder be necessary and available? If the 'swarm' is in the ground it is likely to be bumblebees, solitary bees or wasps.
- How long has the clustered swarm been there?
- Have the bees already entered somewhere like a roof, chimney or wall? If so, how long have they been there? If more than a few hours they may be very difficult to remove.

Chimneys are often very difficult and buildings may need partial dismantling, so it may be worth mentioning to the caller so it doesn't come as a surprise to them later.

Very often early season calls are bumblebees when queens are looking for somewhere to nest and later in the season they are often wasps where the nest numbers have built up and there is a greater need for carbonylhydrate.

If you are satisfied they are honey bees then give your mobile number (if available) to the caller and ask them to contact you if the swarm departs before you get there.

Responsibility

There is no legal obligation on a beekeeper to respond to a swarm call but it is an opportunity to perform a service to the community and improve the reputation, awareness and understanding of bees and beekeeping.

If the initial enquiries leave you in doubt, you might arrange, without obligation, to inspect the swarm on site and to give advice. This might lead to a recommendation that the swarm should be destroyed by a Pest Control Officer or a licensed contractor. This is not the preferred option, but may be the only sensible one where safety may be an issue.

IT IS NOT ADVISABLE TO AGREE TO ATTEMPT SOMETHING FOR WHICH YOU ARE NOT SKILLED, EQUIPPED OR INSURED
(e.g. demolition, building work, poisoning, tree-felling etc.).



Bees fanning over Nassanov scent glands to call flying bees.

Preparation

Before attending to remove a swarm:-

- Explain that whilst every care and skill will be exercised you cannot guarantee a successful outcome.
- Confirm any costs/charges that collection will incur, but check insurance conditions first as you may not be covered if you make a charge above expenses.
- Ask that the immediate area be cleared of people prior to your arrival.
- If you are going to need help, ask another beekeeper.
- Only persons insured for Third Party Liability, (either through BKA or otherwise) should take part in the collection.
- Make sure you have ALL the equipment you are likely to need (sweep or swarm box, large sheet, string, smoker, hive tool, smoker fuel, matches, protective clothing, queen cage, secateurs, saw, mobile telephone, etc.).

Safety

On arrival assess the situation and decide if you are capable of removing the swarm without damage to property or people. If not then you should seek help from a more experienced beekeeper. It is easy to overlook a possible hazard when being helpful and trying to remove what others see as a danger.

A sweep is much heavier when it suddenly has a swarm of bees drop into it. This may cause you to lose balance if standing on a ladder.

If driving home make sure the bees are secure. The odd bee is to be expected and will be more concerned at getting out than stinging you. If a driver is frightened of being stung it could cause a bad accident.

Collection

Once you approach a swarm with the intention of collection and removal it becomes your property and you have responsibility to protect bystanders.

- Advise the closure of all nearby windows and doors (including vehicles).
- Wearing protective clothing, approach the swarm, smoke it gently and shake/brush/detach it from its position directly into the sweep if possible, or on to a large sheet laid on the ground below.
- Bees prefer to move upwards, so if the swarm is in a hedge or similar place put your sweep above it and gently smoke the bees into it from underneath. If you can get some bees into the sweep they should start fanning and may call in the rest.
- Bees will go into a sweep much more readily if it has had bees in before. If it hasn't then imprison the first swarm for several

Things were different for another major player; our old enemy varroa, which has long been cited as the public enemy number one when it comes to apiary health. Indeed, the RAS found, and again confirmed, that high levels of varroa mites were detrimental to the health of an apiary. Worse still, Deformed wing virus (DWV; Figure 6), which is associated with the mite (and also has a high



Figure 5. Distribution of RAS-samples of apiaries that were positive for *N. ceranae* pathogen across England and Wales.

prevalence), is associated with finding dead colonies in an apiary. Of the 19,000 colonies inspected during RAS, a significant proportion was found to have problems with these two organisms. This supports the findings in Defra funded project 'Investigating Abnormal Colony Losses in England and Wales' (<https://secure.fera.defra.gov.uk/beebase/index.cfm?pageid=177>), which showed DWV as the biggest risk factor associated with colony mortality



Figure 6. Adult bee with deformed wings.

(full project report available from Defra). So while there are some new kids on the block when it comes to pathogens, it is important not to lose sight of the ball but maintain the varroa vigil, and keep their levels low to maintain productive colonies (Figures 7 and 8).

What do my personal results mean?

If your apiary was visited and sampled for this survey, then all your results are available on your personal pages of BeeBase. When you look at your results it is important to remember that the tests we use are incredibly sensitive, capable of detecting tiny amounts of any target pathogen. This means that the test can be positive, even in the absence of any disease symptoms. For example, molecular screens used at Fera can detect a single *Nosema* spore within an adult bee sample, so just because your bees tested positive, this does not mean that they will be on their knees with Nosemosis. Honey bees



Figure 7. Monitor for varroa in your colonies — uncapping fork for Varroa mite detection.

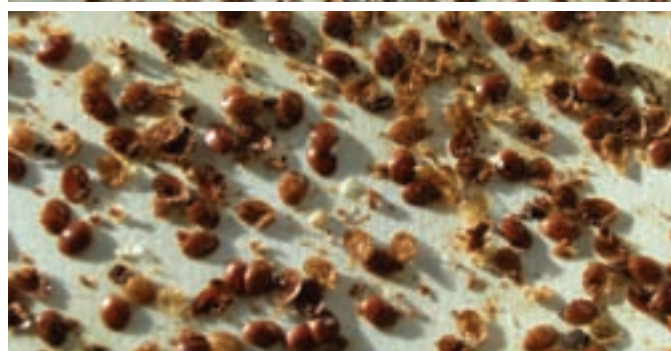


Figure 8. Varroa sticky board insert for monitoring mite drop on a varroa floor (top); low magnification (middle) and higher magnification (bottom) photos of varroa mites on the sticky board insert.

often cope with multiple infections without showing symptoms, and pathogen prevalence can vary seasonally. However, if your bees become stressed, perhaps due to lack of forage or high levels of varroa, then the pathogens we have tested for can cause problems to the health of your colonies. We are preparing an advisory note on what your results mean, which will help to guide those who have participated in this survey to interpret their results. For a copy, please visit BeeBase or email the NBU office (nbu@fera.gsi.gov.uk).

Summary thoughts

In the current economic climate the spending of public money is quite rightly in the spotlight. When compared with our risk-based inspections data, the results of the RAS demonstrate that the NBU programme of inspections is efficient in finding disease, and not missing unknown pockets of infection. That is not to say we cannot improve things. As always, the NBU is very grateful to all the beekeepers who help us and get involved in projects to improve our understanding of honey bee health. Without you, the RAS simply would not have been possible. Together, we have achieved a dataset unrivalled anywhere in the world, which will form the platform of future decisions regarding honey bee health and surveillance.

Acknowledgments

The National Bee Unit gratefully acknowledges the support of all the beekeepers in England and Wales who participated in this project, without whom we would not have been able to complete the work. The NBU also acknowledges the support of Defra and the Welsh Government who funded the survey.

**Giles Budge, Mike Brown, Stephane Pietravalle,
Gay Marris and the NBU inspectors**

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(Ad October 2011)

Continuing Enjoyable Development

I was recently asked why I did not write something about Education as surely I must have some views on the subject. Well, yes I do, but then most of my articles touch on the topic of improving bee husbandry, and if that is not about education, or learning, or self-improvement or whatever you want to call it, I do not know what is.

I will admit that the standard of education, training, mentorship and support is, in some associations, absolutely first class. But think about what you hear said in your own association. Have you ever heard anybody say 'I've been keeping bees for over forty years and I have never taken an exam in my life' or 'We don't need exams to prove that we are good beekeepers' or 'What do we need to study for, we covered it all at our beginners' class'. If you have heard any of these, then I think that your association is a fairly typical example and I feel rather sorry for the new beekeepers in those associations as they are, in effect, being held back by other beekeepers' inertia. No, it is not essential to take examinations or assessments, but surely it is essential for every one of our members to strive to improve their knowledge of our craft and their skills in executing it.

I am sure that everybody will be well aware of the massive increase in membership numbers in recent years — many associations proudly boast of 100%, 150% or even 200% increases over the last two years or five years or whatever. The message always seems to be 'look how we have grown' and only rarely do we hear about the individuals and their beekeeping skills. In many associations, new beekeepers succeed in getting into their second or third year more by their own tenacity than as a result of the help they receive from their association. Often it seems that beekeepers are left to their own devices after having attended their association's (sometimes rather mediocre) beginners' classes.

The more perceptive of the beginners soon become frustrated as their questions are often left unanswered, often because the answers require knowledge beyond that which their tutors have. And even the apiary meetings, which should be a fine opportunity to reinforce the practical skills necessary to develop, often become an exercise in looking for the queen or reinforcing practices carried out in a particular way because they have always been done that way. Rarely does this initial tuition period challenge the students to think for themselves — to ask the essential questions as to why things happen in such a way. Learning to keep and handle bees is all about developing observational and analytical skills, such that problems can be solved by reference to the clues which can be observed and the knowledge which has been gained rather than by asking somebody else to tell them what is wrong.

This inability to rationalise the information which is often clearly available extends to many of our long-standing beekeepers (maybe this is the root of our problem). Just recently I heard a conversation, between two fairly 'old hands', which went: 'Yes, I lost two out of my nine colonies this winter'. This solicited the reply of: 'Oh, I lost two of my six colonies' after which other



Different learning methods. Photos by The Forager.



topics took priority. There was no attempt to identify why these colonies had been lost or what could have been done to avoid it. I was quite shocked by the attitude; colonies of bees are now being treated as a commodity which can easily be replaced if they die out rather than as livestock which deserves to be cherished and supported through difficult times. I have seen the same attitude after the spring crop has been removed from colonies where beekeepers have no regard for whether they have left sufficient stores to see the colony through to the summer flow or not.

Are we as a community content to accept this laissez faire attitude or should we collectively be challenging ourselves to improve our understanding of both the natural history and husbandry of the honey bee?

The BBKA has done much to provide teaching materials at all levels to allow beekeepers to learn more; examinations and assessments are not necessary although the BBKA has an excellent set of modular examinations and practical assessments. What it has still to do is work to improve the methods of delivering learning within our community as clearly, in many associations, there is nobody at home who can do it.

The Forager

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Learning from Others: Electronic Record Keeping for Hive Inspections

Something that we are all told to do, but seems to be fraught with difficulty, is to keep hive or colony records. I must admit I have been struggling to decide what information I need to collect and to find a satisfactory method of keeping and accessing my records.

A key issue is what data to record. One problem here is that there are numerous examples of hive records — just about everyone seems to have their own idea as to what is important to record. This is right of course since we all have differing requirements i.e. we may wish to maximise our honey production, raise new queens or breed in varroa resistance, or all of these.

None of the record-making examples I found gave me what I was looking for. The card index forms had too little space on them and relied on a complex set of coded abbreviations that you either need to keep in your head or on a ‘handy’ reference card. The spreadsheet versions were not developed enough and I wanted to avoid double entry — first onto paper and then transfer to the computer. My main criteria became:

- Spreadsheet-based record is needed.
- Entry through selection from a list wherever possible, to avoid typing.
- Data input using a low cost Android tablet or Smartphone.

writing down 1, 2 or 3 litres of light syrup, you simply put a tick against 1 litre, 2 litres or 3 litres light syrup. You may ask what happens to 1½ litres — well you can be more precise if you wish but then is it really important to be that precise?

It took me a few hours to set up the form to my satisfaction and I am looking forward to my record keeping rather than dreading how to organise numerous pieces of paper. The screenshots in the flow diagram show examples of form design. You start by choosing the question type from a toolbox. Then, you establish the properties of the answers by entering data validation parameters, listing the multiple choices or whatever. You can have calculated answers so that a varroa calculator is included in the form design; you only have to enter the raw data. The most useful question type, to save typing data, is multiple choice. The app lets you choose whether only one answer is allowable (say, apiary name or hive number) or whether several items may be selected from a list (say, hive configuration where you build up the components list).

You design the form to your exact requirements; you need not have questions that mean nothing to you and you can add whatever questions you wish. The questions can be quite explicit, as can the answers. You can try out the form for a while and adjust it to your exact needs. All the data is kept safe on the Google workbook but a new sheet is created every time you amend the form.

The app is free if you keep to one device. With a little ingenuity it should be possible for people to collaborate on their data collection and still use the free version. If, for example, the association's apiary management is shared by two or more people, each person could fill in the inspection report on his/her form which only populates their own specific spreadsheet. But, once there, it is easy enough to copy and paste the data into a common spreadsheet.

If anyone is interested, please feel free to send me an email and I will be happy to send you the form that I have designed to import into your app.

Phil Khorassandjian, Sheffield BKA
sec@sheffieldbeekeepers.org.uk

Setting up Mobile forms using Device Magic

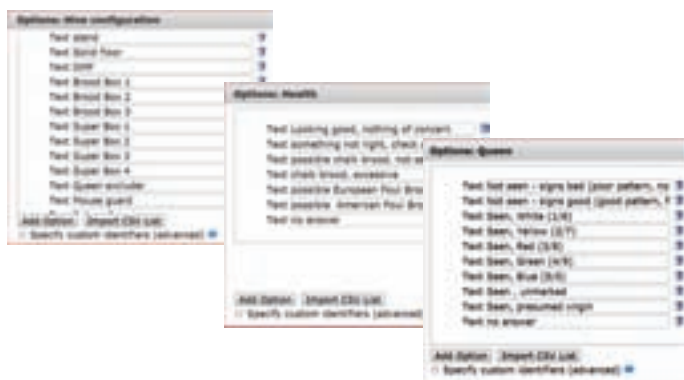


Choose the question type from a toolbox

Define the options you wish to record



Create more detailed forms for your options list, such your hive configurations, colony health and queen observations



Google Forms nearly gave a workable solution. The only thing that disqualified it and kept me searching for a solution was the limitation that you need internet access while you are entering data. This is fine if you are in your garden and within range of your wi-fi, but not so good if you are in a remote out-apiary without access to the internet.

The answer came eventually from an app that will work on a variety of tablets or Smartphones. Mobile Forms by Device Magic is designed for the survey market; it will use a form to collect data and then populate a spreadsheet with the answers. Best of all it will work off-line. If your device is not connected to the internet you can simply save your results on your device and upload to the internet later. I found that most of the data I might enter could be selected by multiple choice options. For example, instead of

Disastrous Beekeeping Purchases

A mustard coloured Land Rover may not be an obvious 'beekeeping purchase', especially when it is clearly called a Camel. However, with young children, a mortgage and just started into fifteen years of buying into a medical practice, a low cost vehicle was the only option. As a family we are both blessed and eccentric; home is in Cumbria, half a mile down a track through woods and fields with mains electricity but water collected from a spring and the roof of the house. The Land Rover was an essential part of the jigsaw giving us the ability to cope with bad weather and move belongings to and from the house because, living here, we have to be self sufficient in all things but most importantly, the Camel was to be our beemobile. Bumblebees had been a passion since early childhood but honey bees came into our lives soon after we bought our dream house. We moved in during a wet April in 1987 and were so very cold we really wondered what we had done but by May we were surrounded by cowslips and early purple orchids and looked out of our windows through sun dappled woodland just breaking into springtime pale green leaf — we had to have honey bees here.



Beemobile at the limekiln apiary. Photos by Julia Pigott.

Beekeepers are a strange mixture, many a life-long feud goes on between beekeeping associations and yet, as individuals, you could not hope to meet a kinder person than a beekeeper. Our first hives were advertised on a supermarket notice board, two white WBC hives bought from an elderly couple who, sadly, were giving up their hobby and moving to a small and easily maintained home. For just £40 we bought two white hives of lifts, floors, brood boxes, three supers for each, queen excluders, crown boards and roofs. The feeders, smoker, huge array of beekeeping equipment and most importantly the home made stainless steel hive tool engraved with weights of honey obtained over the years were thrown in for nothing. The hive tool is my most treasured beekeeping possession and I dread losing it. My husband likes hook hive tools and their grey, plain, stainless steel blends effortlessly into the background. I lose his sharp new hive tool every year, it is so good for scraping off propolis that I just borrow it occasionally and when it has vanished he buys another new sharp one — for me, the system works well.

The honey bees arrived soon afterwards, a gift from a beekeeping friend. Her Peugeot 205 passed the kitchen window beside the track; silhouetted, she drove by swatting at escapees, weary of their long journey up the M6. In that other age we did not have to trouble with varroa and I started my beekeeping in September with one colony to get to know and feed for winter with my copy of Ted Hooper open on the other WBC roof and my hive tool holding the pages down, it was all much less complicated then. The bees thrived; Ted Hooper described how to make an artificial swarm so by summer the next year bees filled both hives. We won the Novice Class in the honey show with gleaming medium honey, in my inexperience and haste after work it was warmed gently to pour it into the jar just before the show and held out of the car window to cool it off completely on the way there. In that first year I also quickly learned that nobody says, 'Mummy can I have ... ?' when you have your head in a beehive — I was a confirmed beekeeper.

As everyone knows, that means you need an out-apiary with more hives and then you need a beemobile to get there, one of those vehicles smudged with propolis and scented with smoker. More beekeeper kindness, the hives, Nationals this time, came from a commercial beekeeper and I immediately made back the investment by selling the May honey crop they contained. With them I inherited two out-apiaries in damson orchards in the Lyth Valley where we live. The apiary on top of the huge old limekiln is essential Land Rover territory and so the idyll came to an end.

My husband, source of new hive tools, could not resist the bargain. Only two thousand kilometres on the clock, long wheelbase, Camel Trophy logos, winch, roof rack with ladder and a huge snorkel on the front — ideal for Cumbria. It seemed good and slightly fitting that it had only been a medical support vehicle crossing the Gobi Desert, not hammered too hard by the Camel Trophy challenge proper. Critically it had only travelled those two thousand kilometres, it came home early because of 'a bit of engine trouble', something to do with all that sand but they would fit a new engine for us — truly a bargain. The boys were thrilled and have never tired of being seen in this unique vehicle and I went

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along with it all with just a nagging doubt; perhaps just the funny colour. As a student with my first car I had had a mini clubman that shade, they called it 'Harvest Gold'. Much as I loved the car, I had secretly called her 'Puke' and I was just a little bit relieved when a red mini came into my life.

The Camel could be loaded with quantities of beekeeping kit,



*Above: On the way;
Right: How many beekeepers
does it take to replace a
crankshaft?; Bottom right:
The journey home.*

although irritatingly, two Nationals just do not fit side-by-side between the wheel arches; the vehicle is thoughtlessly just an inch too narrow. For a little while, all of a month, she made it to the limekiln but then



there was an alarming bang and the crankshaft 'went' as they say. Still under the meagre three month warranty of a second-hand vehicle we finally managed to insist on a new engine. Engine number three in less than three thousand kilometres. Meanwhile the bees thrived and we spent many years with a dozen or so hives, the bees gathered us half a ton of honey one year, a good amount in sheep grazed Cumbria where we do not have arable crops. Beekeeping provided countless projects and talks for the boys as they grew their way through school and we even have a perfectly made observation hive that was submitted for GCSE technology. In that time, like everyone else, we too learned to live beside varroa but in retrospect, its arrival marked a huge turning point in this perfect hobby.

As they say, one thing leads to another. The projects and taking the bees to Beavers and Scouts and into schools as the boys have grown have lead to an increasing commitment to teaching and the Camel, when it moved, was always a wow in school. Meanwhile, the world has changed. I learned about the 'greenhouse effect' in my school biology lessons but for those of us who believe it is happening, climate chaos has become very real and it seems to me it is important to teach children and adults alike about pollination and where their food comes from. An offer to teach for the Field Studies Council came along and the Camel, after a long period of malaise waiting for another crank shaft, was just back on the road and test driven ready to take us, three beehives and our huge load of paraphernalia required to teach on a course off down south. It was like the circus coming to town. Small matter that the fan belt broke on the way and we spent a precious few hours of our journey hunting down a replacement. We arrived by the skin of our teeth, just in time, the new tutors on the block. We whisked the beehives across lovely ancient fields, never ploughed and full of anthills and flowers, to set them up on their stand ready for teaching.

The sun shone, our participants gelled and even the guy who introduced himself to everyone by saying, 'I don't know why I am here, I don't think I like bees' became a convert and indeed, was

the first attendee to become a beekeeper. With the weekend beekeeping course over and deemed a great success we left the bees to go inside before closing the hives. Meanwhile we drove to take our now grown up, university student son out for a supper, a meal which came free of charge because the food order accidentally left on the plate was revealed stuck to the bottom of the pizza. Relaxed and well fed at no cost, on our way back in the dark to close the hive doors we heard the all too familiar almighty bang and once again ground to a halt. Quite understandably the road rescue organisation said 'either we take you east to your bees or north west to Cumbria but not both'. We hatched a plan but Camels do not fit on ordinary road rescue vehicles and the kindly low loader driver who was franchised to rescue us said: 'I will take your bees to Cumbria, but no bees in my cab' and took the long route. Bereft of our four-wheel drive we ran across fields at three in the morning carrying summer weight beehives over the anthills by the light of a head torch and loaded the circus back in the Camel, climbing up and down from the low loader. On the way home, our knight in shining armour regaled us with tales of crazy road users he had rescued.

With the boys completely grown up and left home we look to our retirement, still a few too many years off but we want to keep our links with young people and keep fit and active. Perhaps

we should have a dog? Fate intervened, seventeen acres of land came up for sale beside our house and kindness came to the fore again. With a home done ecological survey and a business plan enclosed with the sealed bid we were successful despite making the lowest offer and now we have a bee sanctuary full of bumblebees. We have huge



old hedges and woodland to coppice, fields full of flowers and a teaching apiary so we really need a mobile beemobile. The Camel is in need of major surgery again — a whole realignment of her insides, a transplant and for the time being we have a pickup with the luxury of bees on the outside. This summer the story has a happy ending and our Camel has been towed to a new owner wanting to perform both transplant and plastic surgery ready to show her.

So what is the message to aspiring beekeepers? Beware if you keep bees, they may take over your life and we know what story about crazy people our knight in shining armour tells the car drivers he rescues as he ferries them home.

Julia Pigott, Kendal and South Westmorland BKA

National Honey Show Essay Competition 2012

The title for the 2012 National Honey Show Essay Competition is:

A Funny Thing Happened at the Apiary

Your essay should be no more than 2000 words long. So many funny things happen and now is your opportunity to write about them.

Solitary Bees: Leaf-cutter Bees

June is the time to keep an eye out for the six or so stout-bodied members of the family Megachilidae. They are known as Leaf-cutter Bees because they cut the leaves of roses and other plants to carry back to their nests to line the cells which they provision with pollen and nectar for their offspring. If you are lucky you may see one of these bees flying past with a large piece of green leaf sticking out. You may also see the leaves on your rose bush with circular holes cut out of them by the bees' mandibles.

The females of all these bees, and their close relatives, collect pollen on the long hairs on the underside of their abdomen rather than on their hind legs, as in most solitary bees, bumblebees and honey bees. One species often seen in gardens is the rather small *Megachile centuncularis* shown here with her golden red pollen brush beneath her abdomen, which has distinctive white hairbands. She collects pollen from yellow daisies and builds her nest in holes in wood.



David Baldock,
Bees, Wasps and Ants Recording Society
www.bwars.com

Megachile centuncularis. Photo by David Baldock.

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Patterson's Page

I am now into my 49th beekeeping season and, as with everything else, the more I know, the more I realise how little I know. Bees have a habit of presenting you with situations that you do not expect, and of course this is more of a problem to the inexperienced than experienced beekeeper. Learning what I call the 'basics' will help you overcome many of the problems a beekeeper might face, but one of the 'problems' for many UK beekeepers is the small number of colonies that are kept by individuals. They are simply unable to clock up the 'colony hours' in the way someone with more colonies can. I understand the NBU gives an average figure of five colonies per beekeeper. Taking into account those with several hundred colonies it means the majority of beekeepers only keep two or three colonies, which means that, unless they find another way of learning, they are unable to gain much experience at the hive. If colonies have clipped queens, the maximum number of inspections per colony per year will probably be around 15–20 (25–30 with unclipped queens). In most cases it will be less. I clip all my queens, my record sheets have 19 entries per colony per year and I rarely exceed that. The modern problems beekeepers face require the beginner to get up to speed very quickly. This is very difficult without some other way of gaining experience, but one way is to help at the local BKA or to get involved with several beekeepers working together.

In my area of West Sussex this spring was not like any other I have seen. In the last few years we have had what I consider to be high winter losses that several years ago simply would not have happened. One major problem has been the sudden change in the forage in autumn where ivy has started to yield heavily. The reasons

for this are very unclear as there seems to be no more ivy than normal and I really do not think temperatures are that much higher. What it has done is to make isolation starvation a problem because ivy honey granulates quickly and is difficult for bees to use unless they have liquid food as well. Colonies dwindling in numbers has also been a problem.

This year winter losses have been negligible and most of those I have known about have either been attributed to bad beekeeping or to queen problems. Out of my 25 colonies I have lost two, one became queenless with a 2011 queen that had previously been laying well and the other was a mixture of bad beekeeping and bad luck as I put mouse guards on in early November on a day when the bees were flying quite strongly. The mouse guard did its job by preventing mice from going through it, but my experience did not tell me that a mouse would be inside a hive when bees were flying! I had four small colonies that I did not expect to get through the winter, but all did and I supered three of them on 22 March. At my local BKA apiary forty colonies were put into winter and as it is a teaching apiary, they were quite variable. One went into the winter strong with a 2011 queen, but she did not come back into lay. Another strong colony was used throughout 2011 for queen rearing using a Morris Board. In March the queen was still there but the brood area was the size of a tennis ball, with very few bees. The outside of the hive was showing signs of dysentery, and nosema was considered to be the problem, but microscopic examination revealed nothing. I saw several colonies with the same signs this spring and all proved negative for nosema, which was a pleasant surprise, though unexpected. At least half a dozen colonies were not expected to survive, but all had good queens and I thought I would give them a chance. To lose one colony out of forty in those circumstances I think is exceptionally good.

I mentioned a Morris Board earlier and I guess many will wonder what this is. I first read about it a long time ago in the *British Bee Journal*, but as with many things in beekeeping it got stored in an odd corner of my brain until I came across it in one of the 'Nutshell' series of booklets. Another account was later published in *BeeCraft* and has subsequently been reprinted as a booklet. When raising queen cells in a queenright colony you need to divorce the queen from the bees that are building the queen cells in another box. This can be by distance, which is usually taken to mean supers, or some sort of physical barrier such as a board of some description. There are several methods other than the Morris, but the principle is usually the same. I am unable to explain the workings of these boards here and I suggest the reader seeks information elsewhere, although it is fairly scant. In time I hope to get some of these methods onto Dave Cushman's website www.dave-cushman.net so if you have a contribution please let me have it so we can all benefit.

At Wisborough Green BKA we sent off comb samples to the University of Keele as part of the BBKA-sponsored investigation into pesticide levels in comb. The result has just been received and all that has been detected is thymol. I am not sure whether there will be further tests or at what levels the testing was conducted. It is projects like this where the ordinary beekeeper can help; we are spread far and wide, and in different conditions, but we can make a useful contribution at little or no cost.

Roger Patterson,
Wisborough Green BKA

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An Enhanced Method of Varroa Management

Some beekeepers have been using the shook swarm method as a means of managing varroa for many years; a chance discussion at the BBKA Spring Convention led to us trying to identify a method of improving the efficacy of this process in order that we may have reliable, chemical-free varroa control.

If we consider a colony that has just reached the economic threshold of 1,000 mites when the shook swarm is carried out and that it is likely (subject to time of year) to be around 85% effective,

we are left with around 150 mites which, with normal development will grow to exceed the economic threshold in a little under three months. Although this efficacy is substantially higher than many of the varroa control or hive cleanser products currently available, it is, in our opinion not good enough and will incur further effort on varroa control in a very short space of time.

Our aims

As a target we are looking to achieve a method of spring control that will require only light further control during the next few months and that will keep us below the economic threshold until the following spring. If we are successful in our objective it is likely that the mite population during the following spring will be lower than the economic threshold, thereby making varroa control easier in the next and following years.

The options

Mite trapping after shook swarm

We realise that one method would be to carry out some form of mite trapping soon after the initial shook swarm and we are aware that some beekeepers use a bait comb, introduced from another colony, to attract and trap the phoretic mites. However, since the main reason for carrying out a shook swarm may well be as a barrier method of disease control, we are concerned that the introduction of a comb from another colony could be self-defeating.



A queen comb cage seen from above (top, left), side view (middle) and open to show its construction with a comb in place (above). All photos by Esbjorn Aneer (Sierra Nevada) and Ian Homer (Dorset).

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Queen comb caging after shook swarm

This has led to us considering alternative approaches and it soon became clear that if, on carrying out the shook swarm, the queen was caged in a queen comb cage (sometimes known as a comb trap), we could control both where and when the queen laid brood and, therefore, we could control where and when the varroa mites entered brood. There would also be the added benefit that the risk of the colony absconding after the shook swarm could be managed without the need for a queen excluder under the brood box. Ideally, this is a procedure which should be carried out in the spring but can be carried out at other times. Beekeepers may wish to consider when their major nectar flow occurs and time the procedure to minimise the impact on income. When autumn shook swarms are carried out, substantial feeding may be necessary to enable the bees to draw sufficient comb to accommodate a brood nest and adequate stores.



A queen comb cage in use (top) and opened (below).

In brief, we will be trying to determine just how long the queen needs to be caged in order that there is sufficient brood to attract and capture the majority of the remaining phoretic mites. As a part of this process we will try also to identify the optimum method of ensuring that the mites choose the comb we want them to choose, rather than just entering comb at random, as this will substantially increase the efficacy of the process. This may mean that the queen will remain in the comb cage for a little longer than

necessary just to lay up the comb in order to create distinct differences in brood age. Alternatively, the use of two comb cages, with the queen being moved from one to the other in succession may be a more effective way forward. Clearly, the use of pre-drawn comb may also be beneficial but we are seeking to minimise the introduction of disease pathogens from elsewhere and, to be realistic, most beekeepers do not have a ready supply of quality pre-drawn comb.

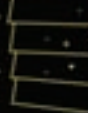
Join our experimental team

Over the next few weeks we will be evaluating this process on a number of colonies both here in the UK and on the Sierra Nevada in Spain; we hope that the diversity of locations will improve the validity of the results. In order to increase the sample size of colonies on which this process is carried out, we are inviting other beekeepers to join us in this research. As there are so many variables (weather, nectar flow, strain of bee, availability of drawn comb, beekeeper experience, etc) it is difficult to be precise on timings of the individual actions necessary for this. To this end we have prepared a protocol which will enable all participants to follow a standardised approach while allowing the opportunity to assess variants. Please contact either Esbjorn on esa@junewatts.com or Ian on beekeepers@hotmail.com if you would like to take part and we will send you a copy of the protocol.

**Esbjorn Aneer, Sierra Nevada, Spain and
Ian Homer, Dorset, UK**

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From Challenges to Solutions: An Apimondia Event

Saturday 24 March 2012 was a superb day. Such a shame to be stuck indoors at a meeting when the weather is fine. Who could have predicted such a warm, sunny day ... in March ... in Ireland. The venue, Citywest Hotel, Conference, Leisure and Golf Resort, Dublin, was a superior location, every bit as good as its title suggested. At the check-in desk attendees were issued with the final programme and name badge (to be worn at all times for security purposes); the team on the reception desk were very efficient.

I arrived early and was able to look around at the trade stands as they were being erected. A number of equipment suppliers were evident along with a packaging company, an international laboratory offering honey analysis and two firms marketing products for treating bees. Some of the sponsors were also evident.

The central events took place in the Kingswood suite, a very well-equipped lecture theatre with screens where everyone could see and hear clearly. The symposium got off to a prompt (well almost) start ably chaired by Phillip McCabe, President of the Europe Commission of Apimondia. It was uplifting to listen to the address given by Marian Harkin, MEP who opened the event. The value of the honey bee to the economy is well recognised in Ireland. Certainly the support given by the government is tangible by their presence at important events.

The impressive programme (see Box 1 above) had brought speakers in from all over Europe (Germany, Sweden, UK, Greece, Netherlands and Italy). The line-up for the morning consisted of three up-to-the-minute lectures, which were open to everyone. Experts in their research fields had the opportunity to report briefly on current advances in their areas. It is a credit to the three professors and the chairman that everyone held to time. It was quite astonishing to discover how much information could be embraced in only thirty minutes. PowerPoint was extremely well used to clarify the research findings in the various subject areas.

At this stage a novel contribution to the usual seminar structure took place. Each presenter made themselves available for a roundtable discussion with an independent chair. To my mind this was the most important part of the morning. It is not often that a group of beekeepers can sit down together with an expert and engage in a conversation. I felt that such an exchange would have been of benefit to the scientists as well as to the participating beekeepers. I congratulate the organising committee in making this possible. My only complaint was that each round table discussion took place concurrently in a different room. Out of the three topics on offer it was not easy having to choose which group you would not sit in with.

After the round table discussions the lunch-break gave us an opportunity to renew old acquaintances and mingle, which was

another highlight of the event. The weather was still agreeable, even good enough to eat outside. In fact the conditions and the company were so good that I missed the lunchtime presentation by Vita, which had not been included in the initial programme.



An early-bird, setting up for the delegates. Photo by Clive de Bruyn.

Box 1. Programme Summary

Nosema	Prof Robert Paxton
Varroa and Viruses	Prof Ingemar Fries
Behaviour and Hygiene	Prof Francis Ratnieks
Round table discussions	
Vita Europe talk	Alex Papchristopherou
Colony losses	Dr Romee Van der Zee
Foulbrood	Prof Ingemar Fries
Vet' Treatment Regs	Dr Franco Mutinelli
Round table discussions	

In the afternoon the format was repeated with three further topics and round tables. It is not possible in this brief report to comment adequately on each of the performances and information acquired from each of the presenters. All I can give here are personal impressions. It was a great pleasure to listen to Prof Ingemar Fries (Sweden) who gave two lectures. Not every scientist can communicate technical matters as well as he does. The other two

Nosema

- ❑ *N. Ceranae* — warm temperature species. Spores dies at 4°C and when dried out.
- ❑ No increase in pathogenicity when both species occur together.
- ❑ *Nosema*-infected bees do not feed larvae much. They mature and forage sooner. *Nosema* does not infect larvae.
- ❑ High density of honey bee colonies leads to more disease, including *Nosema*.
- ❑ Dysentery does not always mean colony has *Nosema* infection.
- ❑ Bleach (sodium hypochlorite) useful for cleaning combs and hives.
- ❑ Winter bees tolerate higher levels of *Nosema* than summer bees.

Varroa

- ❑ *Varroa* mite populations are more or less homogeneous.
- ❑ High levels are treated with formic (or oxalic) acid in Sweden.
- ❑ Trapping technique: confine queens to specific combs and then treat 9–16 day-old brood with formic acid.
- ❑ Evidence from Gotland shows reproductive output of *Varroa* mite is reduced over time.
- ❑ Co-adaptation of mites and bees. Queen adaptation and blocking a virus transmission route has been suggested.
- ❑ Feral colonies are reappearing in France and USA.
- ❑ Message: treat early (after taking honey) before winter bees are born. Also change combs regularly.
- ❑ Icing sugar can knock down but has no long-term effect.
- ❑ Washing bees: useful for estimating natural mite fall and numbers.

Figure 1. Summary of some of the salient messages delivered by symposium speakers about Nosema and Varroa, taken from John Breen.

Bee behaviour and hygiene

- Hygienic behaviour is a natural bee characteristic.
- Beekeepers should work together; breeding groups could be set up working with commercial beekeepers, ideally using about 30 hives, in May or June.

Foul brood

- High colony densities keeps AFB prevalence high.
- Early detection is essential: AFB is difficult for bees to get but once contracted it tends not to go away.
- Robbing is a major transmission route.
- Replacing combs regularly will reduce spore load, which will help to contain the disease (and other diseases).
- Burning colonies with AFB should not create a problem in terms of spore dispersal.

Figure 2. Summary of some main symposium points, from John Breen.

speakers who stood out for me were Prof Robert Paxton (Germany currently) and Dr Romée Van der Zee (The Netherlands). This does not mean that the other speakers did not give good value. The talk I found hardest to absorb was that on Veterinary Treatment Regulations by Dr Franco Mutinelli, although to be fair, his was the last delivery of the day and it is hard to take in statistics (interesting though they were) at the best of times.

The meeting concluded with a short plenary discussion

session. John Breen of Limerick University did an excellent job of summarising each presentation, picking out the salient points (see abbreviated summaries of his slides in Figs 1–3). It is to his credit that he was able to assess such a wide range of topics.

Veterinary treatments and regulations

- More harmonisation is needed across the EU.
- There is a need to recognise climatic and local differences.
- There is a need to provide a level playing field for all countries.
- The cost of seeking approval relative to return is prohibitive in many cases.
- There is a need to consider incentives for minor species — MUMS (minor users, minor species).
- Use of non-chemical approaches.
- Avoid use of antibiotics to bee colonies.

Figure 3. Summary points on veterinary treatments, from John Breen.

The symposium theme was ‘From Challenges to Solutions’, which intrigued me. Although I enjoyed the Symposium I did not come away with any solutions, but I think I now understand some of the challenges much better. All those involved are to be congratulated.

Clive de Bruyn, NDB

Neonicotinoid Pesticides and Their Effect on Bees

The effect of pesticides, insecticides and herbicides on the natural world has a very distressing history and most of us can remember the devastation of DDT which continued long after it was banned. The use of neonicotinoids (neonics) is a serious threat to our bees and I therefore decided to read some of the latest scientific offerings on the subject instead of relying on rumour and sensational journalism. The findings of good scientific research are readily available. There is a strict code of conduct for scientific papers which are peer reviewed before publication. Writers also have to divulge their funding source and reveal any other financial backing which may have the potential to influence the outcome of the research. Many articles are now put straight onto the internet which means that the latest research is rapidly accessible unlike in the past when an academic/scientific paper could take up to eighteen months to get published. To give members a quick update on the latest findings, I have chosen four papers. The only criteria for the choices I made were that they should be very recent and concerned with honey bees or bumblebees.

- Sub-Lethal Effects of Pesticide Residues in Brood Comb on Worker Honey Bee (*Apis Mellifera*) Development and Longevity*, published February 2011, available at www.plosone.org (use the search box to put in the first line of the article's title). This research, carried out in the USA, is the first to demonstrate sub-lethal effects on worker honey bees from pesticide residue exposure resulting from contaminated brood comb. The effects include delayed larval development and adult emergence and reduced adult longevity.

- Multiple Routes of Pesticide Exposure for Honey Bees Living Near Agricultural Fields*, published in January 2012, available at www.plosone.org. The research was carried out in the USA and this article explains how farmers use seeds dressed with neonics and the various ways that this agricultural system contaminates plants and soil nearby. It is then passed on to the foragers collecting pollen and nectar with devastating results because it is highly toxic to bees. Also see www.farmingforum.co.uk
- A Common Pesticide Decreases Foraging Success and Survival in Honey Bees*, published on 29 March 2012, the abstract is available free at www.sciencemag.org but there is a charge for the full paper. This research, carried out in France, used radio-frequency identification tags attached to the honey bees to monitor them. The researchers found that non-lethal exposure of honey bees to neonicotinoid systemic pesticide [thiamethoxam] causes high mortality due to homing failure at levels that could put a colony at risk of collapse.
- Neonicotinoid Pesticide Reduces Bumble Bee Colony Growth and Queen Production*, also published on 29 March 2012 and available at www.sciencemag.org. This research, carried out in the UK, found that bumble bee colonies exposed to the pesticide imidacloprid had significantly reduced growth rate and suffered an 85% reduction in the production of new queens when compared with the control colonies.

Dr Louise Westwood,
Sussex BKA

Note: BBKA has now had responses to its enquiries on this matter from the Chemicals Regulation Directorate and will publish these in July BBKA News. In the meantime, readers may wish to read updates as they become available on www.BBKA.org.uk.

The Red Course in a Case: The Improvers' Course

At Ormskirk and Croston Branch we have a full programme of events for beginners and cater well for our more experienced beekeepers with courses for the modules and General Husbandry.

We were delighted when the Red Course in a Case (shown opposite) came out as we felt that, along with the Green Case, which followed shortly afterwards, it would provide a structured programme for third and fourth year beekeepers. It is labelled 'Improvers' Course'.



The course comes with a memory stick containing ten PowerPoint presentations and an A4 ring-binder containing the tutor's notes. The case also contains 'props' the most intriguing of which is a flat pack kit for a miniature plastic hive to aid the demonstration for swarm control. There is a Porter bee escape, a hive strap, a queen cage, a lateral flow device for the diagnosis of EFB, a small block of beeswax and an uncapping fork. These are just the sort of things that are needed for demonstrations and which I often forget to bring with me.

The content of the course is well thought out and cross-referenced, where appropriate, to the syllabi of the modules. It does not, however, follow the syllabus for any particular module; it is a stand-alone programme. This has advantages in that the beekeepers know from the start that there is no pressure. There is no assessment at the end. The individual sessions are:

1. Introduction, hive design, equipment, hygiene
2. Apiary location and management
3. Natural history and biology
4. Foraging
5. Pests and diseases
6. Honey extraction and processing
7. Swarming and swarm prevention
8. Other hive products
9. Advanced beekeeping procedures
10. Summary and discussion.

At Ormskirk we had eighteen improver beekeepers attending for two hours each Wednesday evening for six weeks in January and February. We found this time quite adequate to cover the material, but on reflection, we probably did not leave enough time for discussion of the beekeepers' own experiences.

We spent little time on session one as we all felt it was too basic.

We moved quickly onto the substance of the programme. The idea behind Apiary Location and Management is excellent although improvers will all have learnt much of this for the Basic Assessment. The tutor's notes are comprehensive but the line drawings of a 'bad', a 'good', and an 'ideal' apiary are disappointing. The included photographs are much better for stimulating discussion.

The natural history and biology section covers the races of honey bees, the external features, the glands and mating. The text is clear and the video of queen mating is excellent. Some of the diagrams need to be revisited e.g. that of the glands is crowded and unclear.



All the pests and diseases that beekeepers are likely to come across are covered well but the poor quality of some of the slides detracts from the excellent material. Also, the slide of burning of an AFB infected hive and that of a knocked over hive are duplicates of some earlier slides. However, I particularly liked the slide of a bear-damaged hive.

I was pleased to see that extraction, bottling and sale of honey were given the prominence they need and this session prompted much discussion and debate. There is a useful video about the use of a refractometer, and acceptable water content, HMF, and diastase levels in honey are all included.

We abandoned the swarming slides because we had no control over them. In the slides showing the Pagden method of swarm control the material 'flies in' at a predetermined rate and is impossible to stop should someone ask a question. This looks good but needs a rethink. The final few sessions are ideal for this group and include moving hives, queen introduction, shook swarm and Bailey comb change.

Overall the course is useful but suffers from some inadequate diagrams and a few poor quality and duplicate photographs. I know that the Course in a Case team are reviewing and updating the material and I am sure that these glitches will soon be removed.

The object of these courses is to improve beekeeping and the health of our bees. To this end the Red Course has proved useful. It is far from perfect but our eighteen improvers stayed the course. They enjoyed it, learnt from it and would recommend it to others. They completed evaluation forms and most commented that it was an excellent course, but with some poor quality slides.

Margaret Murdin, Ormskirk and Croston BKA

On the Bookshelf:

Beekeeping — a Practical Guide

Roger Patterson.
Beekeeping – a practical guide.
 Paperback; RRP £7.99; pp176.
 ISBN: 9780716022855
 Publisher: Right Way (an imprint of
 Constable and Robinson)

The *Old Testament* writer of the *Book of Ecclesiastes* wrote that 'of the making of books there is no end' — and this truth was clearly evident as I browsed through the bookstalls at the BBKA Spring Convention. There are masses of new beekeeping books on the market, many of them are described as 'practical guides'. But do we really need any more such books and are they any good?

Roger Patterson's book *Beekeeping: A practical guide* is among the latest batch that seek to support and guide new beekeepers. The author has a formidable record of activity and achievement in beekeeping circles and his book aims to 'concentrate on the



basics and to keep things simple.' He serves on the BBKA Executive and he is Vice President of BIBBA; Patterson has recently taken over the administration of the Cushman website (www.dave-cushman.net), one of the most used beekeeping websites.

The chapters of his book cover every aspect of beekeeping and the writing style is direct and straightforward. The illustrations adequately support the text, but the few colour plates that are included do not add a great deal to the book.

Long ago I learnt the truth of the saying that if you have five beekeepers in a room that there will be at least six opinions on any subject. The author of this book makes no apologies for his strongly held and clearly expressed opinions. He states in the concluding chapter 'I warned you that in places I would express strong views and I hope that I haven't overdone it ... Some of the things that have crept into beekeeping in recent years annoy me as they have been dreamt up by people that have little or no knowledge ... Be open minded and listen to others and make up your mind what to do, but bear in mind what I said about prejudice and intolerance'. After reading this book I am not sure whether or not the author has heeded his own advice. This book is packed full of practical common sense and is clearly the product of long experience in handling bees; the beginner would have much to gain from a close study of its pages. But the book is also full of the author's opinions, which are, of course, open to debate and question.

Patterson quite rightly encourages beekeeping that is best suited to the conditions that are found in the UK. But he shows no appreciation of what might be learned from other countries and different beekeeping practices, and how they might be adapted to our situation. For example, only British Standard hives are commended in this book and so-called 'American' hives/Hoffman frames are summarily dismissed. There is no mention of the use of 'Manley' frames for supers or any suggestion that Hertzog queen excluders might be preferable to plastic/zinc queen excluders.

An absolute novice or beginner beekeeper would not go far wrong in using this book as a simple and straightforward guide to the craft. But would I recommend it to those that it is my privilege to teach about bees and beekeeping? Probably not, because there are better books on the market and the author's occasional lapses into dogmatism spoil what is otherwise a useful addition to the beekeeper's library.

Dr Stephen Palmer,
 FLS, Master Beekeeper

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News in brief

Phoenix will Attempt to Create the First 'Honey Diamond' from Dead Bees

A British company, Phoenix-Diamonds.com, is going to attempt to create a honey coloured diamond from dead bees. Sound like science fiction? Well, the company have already created a diamond from the umbilical cord of at-risk premature baby Jessica — the Jessica diamond. Using a technique perfected in Russia, they extracted carbon from the umbilical cord and grew the Jessica diamond over several weeks in the laboratory under high pressure (10,000 tons/square inch) and high temperature (1300°C). The Jessica diamond was 0.5 carat, aqua blue, brilliant cut, almost flawless and very clear. The detritus of the 'London Riots' provided the source of a further blue/white diamond; this time 0.79 carat weight.

Phoenix are experimentalists, wishing to push scientific boundaries and devise new ways of doing things. To this end they wish to make a diamond from dead bees (between 150 and 250 ought to be enough to create around 0.75 carat weight diamond), which will be auctioned and the proceeds minus production costs will be donated to bee research. By regulating the growing conditions Phoenix can produce canary yellow diamonds, such as that shown above, within around 13–15 weeks, which will be the aim for the first ever memorial Honey Diamond so befitting of the honey bee.



Bees for Development wins Darwin Initiative Award for work in Kyrgyz Republic

Numbers of beekeepers in Kyrgyz Republic in Kyrgyzstan have decreased from 12,000 in the late 1980s, to around 1,000 now. Kyrgyz people are traditionally nomadic, with state owned pastures occupying over 50% of agricultural land. Legislation in 2009 decentralised the management of pastures to local governments and unions, but considered only livestock grazers, while other pasture users such as beekeepers were excluded — the herb-rich pastures provide wonderful forage for bees. In recent years beekeepers have become increasingly marginalised.

Bees for Development's new Darwin Initiative Project will work to address this situation by achieving amendments to legislation and creating more awareness of the beneficial aspects of beekeeping.



New Regional Bee Inspector for the Western Region

The National Bee Unit is pleased to announce that following interviews and practical testing, Charles Millar has been appointed as Regional Bee Inspector (RBI) for the Western England Region. The Western Region (pale blue area in the map below) covers the counties of Avon,

Cheshire, Gloucestershire, Herefordshire, Shropshire, Staffordshire, Warwickshire, West Midlands and Worcestershire.

Charles has been a Seasonal Bee Inspector in the Western Region since 2009, covering Shropshire and Herefordshire and will take over from David Bonner who has been Acting Regional Bee Inspector since the retirement of David Sutton in 2011. David Bonner remains as Seasonal Bee Inspector for Leicestershire and Rutland.

Charles hails from Glasgow and now lives in Church Stretton in Shropshire. He is a qualified accountant and has worked in various roles in industry and commerce, including several years at Unilever, and at Coopers and Lybrand as a management

consultant. Charles is married with three teenage children, and he enjoys singing, cookery and DIY, in addition to caring for his own twenty colonies of bees.



Photograph of Charles Miller.

Commenting on his new appointment Charles said: 'This is an exciting time for beekeepers and beekeeping, as the craft continues to enjoy a very high profile, while the challenges posed by diseases and pests are, if anything, increasing. I look forward to working with beekeepers, and with beekeeping associations and organisations to deliver the objectives of the Healthy Bees Plan, continuing the excellent work done by David Bonner and David Sutton'.



Andy Wattam,
National Bee Inspector



News in brief

Students Organise a Day of Fundraising for Adopt a Beehive

Students from Charles Edward Brooke Girls' School in, Lambeth, London, recently held a 'Bee Thoughtful Day' to raise money to help the British honey bee by joining the British Beekeeper Association's (BBKA) Adopt a Beehive campaign.

The five girls from Year 11 organised a day of fundraising for the honey bee as part of their Creative Media Diploma studies. The day saw students wear non-school uniform with a black, yellow and brown theme, and they setting up stalls selling bracelets, earrings, key rings and honey based cakes, all made by the Creative Media Diploma students.

The school of 400 pupils raised nearly £450 which they plan to use to join the



Adopt a Beehive campaign, the only sponsorship scheme in the UK that raises money for applied research and education projects to help save Britain's struggling honey bees. Adopters can choose a beekeeper from around the country to adopt and receive seasonal update from. The girls of Charles Edward Brooke Girls School were inspired by the BBKA's London beekeeper, Barnaby Shaw, to join the Adopt campaign.

Jamie Johnson, the teacher at the school who supported students in their organisation of the campaign, commented on the girls' achievement: 'It was a really great day, with the whole school buzzing with enthusiasm! The girls worked so hard raising awareness for the day and selling products that had been made after school and in lessons. The students wanted to do something a bit different for their Creative and Media diploma, and Adopt a Beehive is a well-respected campaign that we wanted to be part of and raise more money to help save Britain's honey bees. We have been able to buy even more Adopts than we hoped and we are looking forward to receiving updates on our beekeepers throughout the year.'

Jane Mosley, Operations Director at BBKA commented: 'We were really happy to hear of the girls' hard work and



tremendous day of fundraising. Adopt a Beehive allows anyone who can't keep bees themselves to get involved with the highs and lows of their adopted beekeeper, and it's great to see young people getting involved with the BBKA, helping to protect Britain's honey bees.'

For more information please contact Rosie Burke.

Rosie Burke,
01295 661257
rosie@twelvepr.co.uk

The Scottish Beekeepers' Centenary

The weekend of 15–17 September will see the Scottish Beekeepers' Association celebrate its Centenary in the Stirling Management Centre, within the spacious grounds of Stirling University. The purpose-built centre provides everything under the one roof and both the town and surrounding area offer much to the visitor.

An imaginative programme of events has been organised: there are four prominent lecturers; workshops and demonstrations — some of which will attract the non-beekeeping partners who might attend — and trade stands; while competitive displays by the local associations will feature their work and their hive products. Saturday evening promises the Centenary Dinner and Ceilidh while Monday offers an outing to two apiaries.

Some 'Rare Books' from the SBA's Moir Library, currently held by the National Library of Scotland, will be on show in Edinburgh while an exhibition of Scottish Beekeeping will be displayed at the National Museum of Rural Life at Kitching, East Kilbride.



Una A Robertson,
SBA Centenary Committee

Scottish Beekeepers' Association, 1912–2012



Centenary Celebration Conference in Association with BIBBA

Saturday 15 and Sunday 16 September with optional outing
Monday 17 September 2012

at

Stirling Management Centre, University of Stirling,
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Lecture Programme:

Dan Basterfield NDB, Prof Keith Delaplane,
Prof Robert Paxton, Prof Robert Pickard.

Plus workshops and demonstrations for beekeepers
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Centenary Dinner and Ceilidh Saturday evening
Trade show and exhibition

Daily rate includes a two-course lunch, morning and afternoon tea
and coffee. Discounted rates until 30 June

National Beekeeping Associations and BIBBA members £30,
£35 non members; Centenary Dinner and Ceilidh £25;
Monday outing £25

Download a booking form from www.scottishbeekeepers.org.uk

Business Corner

New BBKA Administration Manager

I am Julie Marples. I consider it a privilege to be given the opportunity to work for the BBKA as Administration Manager. I have many years of admin experience as well as people skills and I am genuinely excited to bring these experiences and abilities to the BBKA. I have worked for many years in a very diverse role for a UK distance learning provider of professional university courses. My role involved human resources, payroll, accounts and office administration. I look forward to learning all about the honey bee and the importance of its preservation as well as taking part in one of the BBKA's courses.

I am 47 years old with two children; Kelly aged 24 years and Harry who is 21 and I also have a granddaughter. I have two great sisters, one of them is the General Services Manager of a local charity, the other is a carer for the

elderly. I also have a fantastic brother. I was born and raised in Sheffield, though we moved to Coventry, where I now live, when I was 11 years old. Aged 13 years I moved to South Africa with my parents and siblings; here I spent a few years at school, followed by a return to South Africa during my 20s for a further three years. All of this has been great life experience for me. I have been with my lovely partner, Steve, for one year; he also works as a volunteer for a local charity. My dad, a retired builder, lives in Leamington Spa along with my paternal grandmother now aged 89 years. Both still hold onto their strong Yorkshire accents!



Julie Marples,
BBKA Administration Manager

Spring Convention 2012

The move to Harper Adams was a major challenge, and while overall we consider the event was very successful, not unexpectedly, some short-comings were encountered. The comments received from delegates and exhibitors will be considered in detail at the Spring Convention Committee 'wash-up' meeting. Without pre-judging our deliberations, your comments on the advantage of staying on campus and booking tickets in advance are very relevant to getting the best out of the event. The reaction to the credit-card machine issue by setting up the 'bank' seemed to work well, which ensured that there was no shortage of cash for would-be buyers; the traders seemed to like being able to bank cash there and then, too. Many other problems relate to members 'learning' their way around the new venue. We must try again to solve the perennial problem of relating lecture hall capacity to likely demand. It may not be totally resolvable, but we must seek to limit the problem without making every element of the show pre-bookable, which would be a huge administrative burden and remove spontaneity from the event. I will report back to members following our wash-up meeting.

Tim Lovett, Chairman,
Spring Convention Committee

Insurance for Beekeeping Equipment

Kent based insurance broker Towergate Insurance, are extremely proud to announce their (All Risks) Contents Policy, designed exclusively for members and associations of the British Beekeeping Association.

When it comes to specialist insurance, Towergate is one of the UK's success stories. Established in 1997, Towergate is today, Europe's largest independently owned insurance intermediary. Towergate Insurance is part of the Towergate Partnership, based in Sevenoaks, Kent they provide insurance solutions to businesses both locally and nationally. With over 4,000 staff, across 100 UK only offices, Towergate Insurance offer over 200 specialist insurance products and risk management programmes.

Towergate's dedicated team of insurance advisors have a wealth of experience and expertise and are committed to providing a personal approach to the service they provide to their customers. Towergate present the benefits of a local insurance broker backed by the strength and buying power of a large corporate organisation.

In partnership with Ansvar Insurance, Towergate can provide Contents Insurance in relation to your beekeeping, whether you are an individual looking to cover your own personal contents, or whether you are representing a local or regional beekeeping association. This specialist scheme provides cover for the following contents:

- ❑ Apiary, Hive(s) and parts, Accessories.
- ❑ Shed(s), Demonstrations Shelter(s), Log Cabins.
- ❑ Workshops, Workbenches.
- ❑ Floodlights, general electrical equipment.
- ❑ Honey Extractor(s), Smokers etc.
- ❑ Trophies and Silverware (maximum value £500).

- ❑ Clothing such as Bee suits, White coats, Aprons, Gloves etc.
- ❑ Exhibition Stands and Content.
- ❑ Computers, Projectors and electronic equipment.
- ❑ Microscopes, Books etc.

Other benefits this policy includes are:

- ❑ Accidental Damage cover provided in addition to full perils including theft and malicious damage.
- ❑ The (All Risks) contents policy provides cover for anywhere in the UK, including the Channel Islands and the Isle of Man.
- ❑ Flexibility in levels of contents cover is also offered in a banded structure to suit your individual requirements.
- ❑ A member or association is also covered while their equipment is being exhibited anywhere in the country, including schools and community centres.

Although money or Exhibition Liability is not covered under this policy, it is possible to arrange this requirement as an additional cover or on a bespoke separate policy arranged by Towergate Insurance.

A specialist Towergate team (known as the BBKA team) are available to discuss quotations, premiums and any queries you may have regarding this policy. Please call Noel Davy on 01732 747587 or e-mail bbka@towergate.co.uk.

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Business Corner

The Bee Medicines Record Card

Avid readers of *BBKA News* may remember the 'Taking the Medicine' series in 2010, in which we looked at the discovery, development, regulation and distribution of veterinary medicines for honey bees. Given the relatively few medicines that we have available to treat bee disease (not forgetting that we are about to lose Fumidil B!) and that we have encountered problems in the form of resistance to some of these medicines, it is important that we use medicines properly and with care.

Bee medicines like all veterinary medicines, come under the Veterinary Medicines Regulations (VMR), the latest edition being 2011. Based on the EU Directive, these define what a medicine 'is' and classify them according to the type of animal being treated, how they may be prescribed and dispensed. Honey bees are classified as food producing animals (FPA) in the same way as cattle, sheep, pigs, poultry and fish. With this classification come special requirements as food produced, in this case honey, will enter the human food chain and safeguards are required to protect human health.

The VMR require the keeper (beekeeper) of FPA to maintain records of the purchase of the medicinal product, to include the name of the product, the batch number; the date of acquisition; the quantity acquired and the name and address of the supplier. When the medicine is given to the animal (bees), the keeper must further record the name of the product; the date of administration; the quantity administered; the withdrawal period; and the identification of the animals treated (in the case of bees, the hive number or identifier). Finally, when disposing of unused medicine the beekeeper must note the date of disposal; the quantity of product involved; and how and where it was disposed. These records must be kept for five years following administration of the medicine even if the animals concerned are no longer in the keepers possession, e.g., the colony has died, been split, swarmed, sold or given away.

In the Taking the Medicine series we gave an example of a medicines record card, which has now been developed in conjunction with the Veterinary Medicines Directorate (VMD) into a useful document, a copy of which is enclosed with this *BBKA News* for your own use, to record purchases, administration and disposal of bee medicines. The BBKA is sending some stocks of

these cards to medicines suppliers and will make the artwork available for further print runs. It is suggested that suppliers include a copy of a record card each time they supply beekeepers with a medicine. The introduction of a simple record card is long overdue and complements the hive records we should all be keeping in our day-to-day bee husbandry.

Paul Green, Director of Operations Division at the Veterinary Medicines Directorate, said: 'Like all animals, bees are susceptible to diseases and so it's important that beekeepers keep track of the medicines they give their bees so they can keep them healthy. The BBKA's new bee medicines record card is a great initiative which gives beekeepers a useful tool to monitor the medicines given to their bees.'

Tim Lovett,
BBKA Public Affairs Director

Imported Bees

Readers are reminded of the BBKA's policy to discourage the importation of queen bees and colonies from outside the UK. Prospective purchasers should satisfy themselves of the origin of bees offered for sale.

Diary of Events 2012

7-9 June. *Royal Cornwall Show*, Wadebridge. Schedules available from Sheila Sleeman, 01872 863842.

10 June and 17 June. *Kingston BKA*, Hampton Court Apiary, Surrey. Two-day fast track practical beekeeping course, Sunday 10 June & Sunday 17 June, 10am to 4pm. Intensive course aimed at those who have bees or complete beginners who wish to condense their learning. Course will cover the basics, including hygiene and pest control and costs £50. Apply to Membership Secretary at <http://kingstonbeekeepers.org.uk/contact.us>

25-27 October. *National Honey Show*, Weybridge, Surrey.



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Your Letters



Family Trees

I have had an inspiration. I am sure we all get them. They seem to come from nowhere and in no time at all but, in truth, the idea has probably been germinating for a long time waiting for that glorious Spring morning. Today will do, 27 March, cloudless sky and a warm afternoon in prospect. Three germs have been gurgling away in my mind over the recent and not too recent past, all contributing to my inspiration.

Here, on the edge of East Anglia, around our lovely village, we lost about forty hectares of wild meadow to the plough two years' ago and another ten or so last year. We often holiday in Devon (South West Coastal Path — another 400 miles to go). The lingering picture in my mind throughout the winter is not of sea and clifftops, but of the patchwork of fields and hedges rising and falling on the hillsides with hardly a cow in sight. Then, you must have read Sarah Holdsworth's articles on the disastrous loss of insect habitat. The answer, and my inspiration is 'trees'. Simple.

Many years ago I entered a MAFF (I think it was MAFF) business start-up competition for a £30,000 grant. I did not win of course — I must have come second! My proposal was to set up a business called 'Family Trees' which gave us all the opportunity to plant a tree in memory of each dear departed in memorial forests around each town and city. I calculated that if fifty million people planted a tree at 10m apart we would have forests equal in size to half of Devon County in 75 years. The trees would then be felled and sold for hard timber. The profit (or loss) would belong to the business. Mourners would pay an initial fee.

Think of all the benefits. I will not spell them out, they are so obvious. So, what do you think? Do the sums, shoot it down if that is what it deserves or, better still, come up with your own ideas of a brighter future for our land and people.

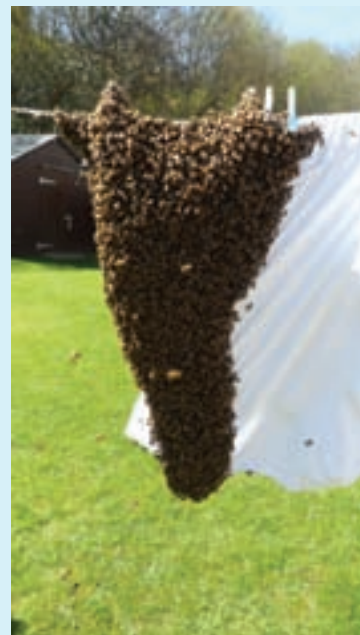
Sam Greenbank,
North Hertfordshire BKA

Virgin Swarm Collector

Saturday 21st April, my first swarm! Luckily with the help of Phil and Kathy from Sheffield BKA we collected these lovelies. The bees kindly swarmed onto my shirt hanging on the washing line, then selected a shirt and ... hey presto ... an easy capture for a first timer!



Settling on the washing. Photos by Daisy Rowan.



Choosing which shirt to cluster on

Jackie Rowan,
Sheffield BKA

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Dr Grace McCormack,

Head of Zoology,
National University of Ireland, Galway



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