

BBKA News

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



No: 205 – September 2012

Our Diamond Queen Bee



Despite the oddities of the weather, 2012 has thus far been a year of celebration for the UK with many local events commemorating the Queen's Diamond Jubilee and supporting Britain's hosting of the 2012 Olympics and Para-Olympics.

As might be expected opportunities to enthusiastically enjoy these exciting national occasions were not lost by Britain's beekeepers, and this was amply demonstrated by the Mid-Bucks Beekeepers' Carnival Day float display, seen here. The Mid-Bucks Beekeepers revealed hidden talents and special skills as they worked together to create a spectacular prize-winning display to delight and educate the public.

Read more about their fun-packed event on page 12.



To Clip or Not to Clip
Do you clip your queens?
Perhaps it is time to reconsider its merits.
Some pros and cons are reviewed on page 7.



Granulation in the Comb
If you have found your lovely honey harvest is rock solid in its frames worry not, help is at hand on page 9.



Making Cold-pressed Soap
You have worked hard all year tending your bees. You deserve a treat — make some exotic soap. See how on page 21.





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Chairman's Letter



This summer the weather was challenging for many of us, especially gardeners, growers and beekeepers. The damp and cold of the spring kept our bees in their hives for weeks in some places. Apart from making them bad tempered and difficult to manage this also encouraged them to swarm prolifically as soon as the temperature suited them, and the subsequent cold reduced the opportunity for new queens

to secure adequate mating in some areas. A cold spring and early summer leads to a very slow start for plants so this also affected the vital forage needed by both over-wintering bees and young brood. Flowering started late, was of poor quality and started fading early. The importance of honey bee nutrition cannot be underestimated; with inadequate feeding bees do not develop properly and are potentially more vulnerable to disease. Good nutrition is not just a prerequisite for bee health but is vital for the colony to collect, process and produce adequate food for growth and stores for over-wintering. Anything above this is a surplus which the beekeeper might consider harvesting, but in a year like this care and restraint are needed to prevent winter starvation.

Trainers, speakers and course organisers will now be planning and preparing their courses for the winter months and next year and I would urge them all to raise the profile of bee nutrition in their talks. The course content should include details of the quantities of stores required for good over-wintering and the beekeeping practices needed to achieve this successfully. While there is little we can do about the weather we can adapt the management of our bees to ensure their survival. Our message about the importance of bee nutrition should also be promoted to the general public, policy makers and those who are responsible for land management. From the smallest garden to the farmed landscape there is much we can do to help honey bees and other insect pollinators though the provision of good forage throughout the beekeeping season.

For the past year a government panel led by Defra has been reviewing disease control legislation for honey bees in England and Wales, assessing its fitness for purpose and proposing changes to current practices. The latter aim to ensure that both a robust and effective inspection system and bee disease control management practices are in place together with a surveillance programme for exotic species such as the Asian Hornet and Small Hive Beetle that have not yet reached our shores. It has been my privilege to represent the BBKA on this panel. The panel's findings and recommendations will be published in a consultation paper and all interested parties will be able to offer their views on these; further details will be given in *BBKA News*, and on the BBKA and the Defra websites. Do ensure you read the document and have your say; your responses and suggestions will be considered by Ministers and decisions made about whether the recommendations will be adopted. Through responding to this consultation the voice of beekeepers will be heard.

David Aston, BBKA Chairman

Cover photos: Main images: Geoff Hayward-Smith; Top right: David Wootton; Middle: Dan Basterfield; Bottom: Dr Sara Robb.

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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EDITORIAL

Editor: Mrs Sharon Blake, Stratton Court, Over Stratton, South Petherton, Somerset, TA13 5LQ. Tel: 01460 242124

Deputy Editor: Dr Christine Knott, Tel: 07765 130203

Design: Roger Cullum-Kenyon

All editorial enquiries and submissions should be sent to the editor at: sharon.blake@bbka.org.uk

ADVERTISING

Lynn Pearce. Email: advertising@bbkanews.org; tel: 01732 851955 (Office hours: Monday–Friday, 9am–5pm)

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CONTRIBUTORS

Regular contributors: David Aston, Dr Bee, Sarah Holdsworth, The Forager, Rowland Molony, David Baldock and Jon Arul.

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Please send any alterations for direct mailing, via your Association secretary, to the BBKA Members' Register.

OPERATIONS DIRECTOR/ GENERAL SECRETARY

Jane Moseley, National Beekeeping Centre, National Agricultural Centre, Stoneleigh, Kenilworth, Warwickshire, CV8 2LG.

Tel: 02476 696679 Fax: 02476 690682

Email: jane.moseley@bbka.org.uk

Website: www.bbka.org.uk

In the Apiary

After this awful summer when our colonies have swarmed incessantly and the jet stream stayed south of the UK for many months reducing average temperatures and increasing rainfall over most of the UK, we need to help our bees get into good condition for winter. Last month you should have assessed the disease status of your colonies and treated where necessary. Now is the time to assess the stores in the colony and determine if your colonies need additional feed to help them survive through winter.

Feeding the bees

The general advice is to ensure that each colony has about 20kg of honey stores available for winter. You will hear variations on this number because the average winter duration varies over the country and different strains of bees require more or less honey to survive the winter. From the bees' point of view the ideal winter is one that moves rapidly from mild sunny weather to cold temperatures which during night and day remain lower than 5°C but do not go below -18°C. Oh, and by the way, it is better if the bees are out of the wind and the humidity remains low.

Under these conditions the bees will cluster together and the queen will stop laying. The internal temperature of the cluster will reduce to about 20°C and, so long as the humidity stays low, the bees will keep each other warm and wait for spring. Under these conditions it is unlikely that the bees would need half of the recommended stores. Unfortunately for the bees we are very unlikely to get a winter like this and must plan for a more normal season and provide plenty of stores.

Stores are used by the bees to raise their body temperatures by exercising their powerful indirect flight muscles. Should the outside temperature rise above +5°C the cluster of bees will start to break and some may be encouraged to fly from the hive. The worst possible conditions are warm winter days and cold damp nights. Under these conditions the cluster will break in the day and reform each night. The process is stressful to the bees and they can consume far more stores. To be safe we should provide sufficient stores to ensure the bees can manage this scenario.

What to feed

The best feed for the bees is honey they have collected during the summer. This may not be possible if the main crop is rape as this is likely to solidify in the frames during the cold weather and be difficult for the bees to use. Likewise many beekeepers will remove their honey crop before the end of the season (say in early August) and allow the bees to build winter stocks from the remainder of the flowering season. This can work well, but if the weather is poor

the bees may not have stores enough to last all winter. Supplementary feeding may be necessary and this is better done in the autumn (now) rather than emergency feed in early spring when the colony is at its smallest.

Feeding can be done with white granulated sugar dissolved, with regular stirring, in warm water. The mixture needs to be as concentrated as possible and is made by mixing 1kg of granulated white sugar in 630ml of warm water, which should produce the familiar thick syrup that is about 60% sugar. This should be fed to the bees using a rapid feeder and is better if it is still warm (about 30°C). Only use white sugar as the impurities in brown sugars are toxic to bees. Here I must show a prejudice as some beekeepers believe that the pesticides used on beet sugar are expressed in the sugar and are harmful to bees so we should all use cane sugar. I have talked to many people, both beekeepers and sugar scientists, and this claim is unfounded. You can use either cane sugar or beet sugar and if you are really worried about the environment (and food miles) perhaps use beet sugar as this is grown in this country and also in Europe.



A commercial feed available. Photos by Dr Bee.

Commercial feeds are available (e.g. Ambrosia) which are ready made for bees. These have the real advantage that the sugar concentration is about 70% and the sugar is partially inverted (by enzymes). For bees to store sugar as 'honey' they must invert the sugar (convert the sucrose into glucose and fructose using enzymes) and increase the sugar concentration to at least 80% by evaporation. Therefore, partial inversion and a greater concentration of sugar in commercial feeds reduces the work that bees need to do to process the mixture. Also, they are able to continue the processing at lower temperatures. I can certainly recommend these as I have used them for a number of years and have noticed that the bees seem far more attracted to these and process the mixture faster than home prepared sugar solutions. The down side is that they cost about twice the price of home prepared sugar solutions.

Finish in good time

Feeding bees should be completed well before the temperatures drop.

Once again it is difficult to give specific dates but in most of the country it is better if feeding can be completed by the end of September. There are compromises for beekeepers who rely on Himalayan Balsam for a honey crop and those that take their bees to the heather, who may take longer to get their colonies ready for winter.



Finish feeding before winter!

Dr Bee

2012 International Meeting of Young Beekeepers

The BBKA team did extremely well and came 6th overall in the team event (Ireland were 11th, Wales 12th and Scotland 13th) out of fourteen countries. In the individual standings Elsa Cavill (age 13 from Fleet BKA) came 12th; Tex Garbutt (age 15, Petersfield BKA) came 20th and Verity Foster (age 14, Petersfield BKA) 21st out of 37 competitors. All have passed their BBKA Basic Assessment.



2012 competition entrants, left to right: Verity Foster, Tex Garbutt and Elsa Cavill.

Competition was fierce with many of the competitors from other countries being children of professional bee farmers. Also, a number of countries had to choose their team of three from several thousand applicants through a series of regional events to select their best participants. It is, therefore, really remarkable that our scratch team did as well as they did.

The event was originally scheduled to be held in Switzerland with 36 countries competing, but the Swiss organisers pulled out with a month to go and the Czech Beekeeping Union very kindly stepped in, giving them only a few weeks to put the whole event together. Many competitors from countries further away were not able to change their flights and unfortunately could not attend, so the number of competing countries reduced to fourteen this year. Despite the late change of venue, the Czech Beekeeping Union did a magnificent job in organising a first class event. All the teams were met at the airport or train station and driven directly to the hotel where they were introduced to their minder for the event. The minders were local students completely fluent in the visiting countries' languages, in this case English! Each participant was issued with several green polo shirts for the duration of the event and our hosts were wonderfully welcoming ensuring that the teams were always looked after. The food

was wonderful and every minute detail was taken care of. Each participant received a medal and certificate commemorating the event along with many other gifts from our hosts and the other teams. They even gave each participant a DVD of all the photos taken during the entire event by the official photographer. Truly amazing considering they only had four weeks to put the whole event together. Next year, the event will be held in Germany, near Munster and it really deserves the BBKA's continued support; hopefully generating more interest among young beekeepers across England.

Simon Cavill, Hampshire BKA



Verity, Elsa and Tex with Geoff Galliver of Fleet BKA.

Results by country: The Czech Republic (1st), Austria, Poland, Slovakia, Slovenia, England (hurrah!), Bosnia and Herzegovina, Germany, Liechtenstein, The Netherlands, Ireland, Wales, Scotland and Israel.

Elsa Cavill reports:

On the first day, we were escorted from the airport to the hotel. There were several games that we played to get to know each other, including one where we drew faces on a balloon, swapped them, and then tried to find who had our balloon. After the games there was an Opening Ceremony, where all the countries were welcomed. Then five teams did their presentations, including Israel who taught us a song in Hebrew.

On day two, we were taken to the senate building of the Czech Parliament, where several ministers gave speeches to welcome us and also passed a bill to create a National Beekeeping and Beekeepers day for the 20th of May. Each country's team leader was given a letter to take to their national beekeeping associations to encourage each of their governments to do the same. Then we were taken on a tour of Prague, including the Astronomical Clock, the Tuscany Palace, the Charles Bridge and St. Vitus' Cathedral. In the evening we went on a 'Party Boat' where we danced and went wild, and had an amazing time. We travelled on the Czech Metro as well, which was similar to the Underground in London.

The third day was competition day. We were driven to the Czech National Bee Research Institute at Dol, which was about forty minutes from the hotel. We competed in a number of different tests including: a botany test; practical bee handling, including marking a drone; recognition of different beekeeping tools; identification of different honeys; a general written test and finally gingerbread decorating.

The Czech bees at the institute are pure bred Carnicas; all were incredibly calm and docile, the staff handled them in T-shirts and shorts with no veils! I decided to put on a veil as I have thick, curly hair, but the bees never bothered us and nobody was stung throughout the entire day. If only our British bees could all be that well behaved! We were all impressed at how professional the whole set-up was. The institute produces queens that are shipped to Czech beekeepers all over the country to ensure they have the best quality bees possible.

The results were announced that evening, and England came 6th! I came 12th individually. Then a magician performed all sorts of impressive tricks, including turning a white cloth into a dove! We did our presentation after that, and showed everyone how to make a proper English cup of tea. Then everyone handed out gifts to every else. We received some very nice presents, including tulips from the Dutch and a confusing poem from the Scots. Then it was a couple of hours of free time, and bed.

On the last day, our guide took us to Prague Zoo, which was huge in comparison to the English zoos. It even had a mini ski lift up a cliff to another half of the zoo, and you could see the whole of Prague from the top. We also visited a beekeeping shop, where they had huge jars of honey and bottles of mead. Then we went to the airport, said our goodbyes, and caught our flight back home. I have made lots of new friends and had lots of new experiences, even learned some new languages! I will definitely go next year if I can!

Elsa Cavill, Fleet BKA

Delayed Varroa Treatment can be Fatal

This has been a particularly difficult year for bees and may result in a poorer honey harvest than expected. Some beekeepers will be hoping for a warmer September and to delay their varroa treatments to later in the year. Yet this poses a danger of losing colonies through winter due to high 'viral load'.

The levels of varroa within a colony should ideally be assessed at various points through the year so that suitable controls can be applied when necessary. In the UK an upper threshold for a mite population of 1,000 is recommended to keep all colonies safe, but elsewhere a threshold of 3,000 is common. These numbers are hard for beekeepers to evaluate visually so populations should be assessed using mite drop or drone brood examination. Integrated management controls can be used between April and July depending on the system chosen, and in the future there might be biological controls, such as predator mite, available. However, since few beekeepers seem to use the existing biological controls August is generally the recommended time to treat. The reason for this is that while brood is present varroa populations double every three to four weeks through the spring and summer. Allied with this increase it must be borne in mind that the bee brood only increases up to late June or early July before rapidly declining. This means that as summer draws to a close more varroa mites are entering a greater proportion of bee brood cells to reproduce, which can cause an escalation of viral diseases within the brood and the resulting adult bees. For colony survival it is important that treatment is carried out as early as possible so the brood that will develop into winter bees is comparatively varroa free.

Chemical controls are used immediately after removal of the honey crop, so delaying to get a little extra honey and then treating later in September can be fatal as winter bees will be likely to have higher virus levels resulting in a shorter life. This will be likely to cause colony dwindling or death in late winter or spring. The licensed varroacides in the UK are broadly divided into two categories. These are:

Pyrethroids: These include Apistan and Bayvarol. They are neuropoisons, which cause paralysis to the mites by altering sodium channel activity on nerve membranes. There are some areas where there is pyrethroid resistance, yet this is often counteracted by using a product with a different active ingredient for a couple of seasons, by which time pyrethroids should be effective again.

Essential oil based: The most common ingredient in these products is thymol, which when inhaled or consumed by the mite causes death. It is unclear exactly how the oils cause mite death, though it is suspected that they have more than one mode of action which means the likelihood of building up resistance is reduced. On the down side essential oils are less potent at controlling varroa levels. The products available in the UK are Apiguard, ApiLife VAR and Thymovar. These products have a strong scent and should be applied after removal of the honey crop. Also feeding and treating at the same time should be avoided as this increases the risk of robbing.

Jon Arul, The Bee Vet



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To Clip — or Not To Clip ...

As with so many issues involving beekeeping, opinions are divided on whether queen honey bees should have their wings clipped. For many years I regularly clipped new queens once they were proven to be laying good brood, but now I do not. I started to ask myself why I stopped and here is my analysis of the practice.

We have to look a bit deeper into what honey bees and keepers of bees do. Taking the modern and popular approach that a colony of honey bees is a superorganism, we know that reproduction of male and female bees happens all the time, thus renewing the 'cells' of the organism and I include queens in this. However, what happens when a whole colony, or superorganism, dies? If there were no mechanism to reproduce it, honey bees would become extinct. Swarming is the way in which reproduction takes place at colony level and is absolutely natural. Some colonies reproduce — i.e. swarm — more than others.

Bearing in mind that honey bees are wild creatures and are not domesticated in the way that cattle and sheep are, we, as beekeepers, can be said to manage honey bees for our own purposes whether it be for profit or pleasure, or hopefully a bit of both. We manage them in the sense that we understand how they live and we try to work with their life-cycle, offering them an attractive environment in which to thrive, but for our own ends.

If our managed colonies swarm, what are the consequences? We lose at least half our foraging force and therefore probably a lot of our honey crop. Our neighbours may be quite upset by the phenomenon of the bees either landing in their thousands nearby or taking up residence in their property, as they know that whatever else honey bees do, they sting. So we try to prevent our colonies from issuing swarms by creating conditions which induce them to give up swarming (swarm control) or not attempt it in the first place (swarm prevention).

Where does clipping of queens come into this? Consider that usually, when a colony is preparing to swarm, it raises a number of new queens in their royal cells. When the first of these is capped eight days after its egg was laid the swarm issues. Therefore, if we inspect our colonies at seven day intervals we can discover the cells and dissuade the colony from its reproductive intent.

If a queen has her wings clipped so that she cannot fly when she leaves the hive, she falls to the ground and the bees in the swarm eventually realise they are queenless and return to the hive to await the emergence of the first virgin. This will normally be in about eight days. So although we may have lost a queen, we have not (so far) lost a large proportion of bees which would have gone in the swarm. Beekeepers who are very busy find that clipping their queens therefore gives them a little extra time to take action and prevent the loss of many bees, allowing them longer between inspections. This includes those who have many hives as well as

those with small numbers of colonies who cannot inspect their bees every week.

Fine, but what about the poor old queen? I do not like the fact that I am maiming my queens by clipping them, even though I know that pain is not inflicted, but as I have a busy teaching apiary I am usually on top of what is happening in my hives and I do not have many compared with a commercial beekeeper. I urge my students not to let their bees swarm, but I am acutely aware that it is the natural thing for colonies to do! Students are given the option of clipping, but most do not yet have the dexterity, and by the time they do, they should be able to make an informed decision about it. Swarm prevention is preferred over swarm control. However, the bees in a swarm naturally leave behind a colony which is reproducing a new, young queen. No doubt the departed swarm will soon supersede their old queen; nest congestion is relieved, perhaps pests or diseases are being left behind, and pressure on forage is reduced since the swarm usually takes up a new home some good distance from the old one.

Given the well publicised plight of honey bees (and other insects) and their decline, there are many people who have been attracted to beekeeping with motives other than obtaining a crop of honey. They may not yet know a lot about beekeeping but they do enter the craft without many of the conventional ideas that well established beekeepers have. That is not to say that they do not have a whole set of other pre-conceived ideas, but they tend to have open minds about the natural world and the position in it of bees. It goes against the grain to cut off half the queen's wings just so that she is prevented from performing a natural activity. Many experienced beekeepers feel like this too and have the right to their own opinions once they fully understand all the issues. Keeping young queens in healthy colonies with plenty of space in good clean frames to store food and brood goes a long way to reducing swarming in a colony and regular inspections at swarm time reduce the need to clip queens.

Of course we may believe that it is irresponsible of our neighbours to allow bees to swarm, but perhaps our neighbours will understand our beekeeping methods when we explain what we are doing to help the natural world. The strong movement towards 'natural' beekeeping might annoy some of us who dislike being told that our modern methods of keeping bees are far from 'natural'. However, perhaps we should keep open minds ourselves and leave our royal ladies with their wings intact!

In conclusion, clipping queens has advantages in terms of management of bee colonies in hives but at the expense of interfering with the natural instinct and behaviour of these wild creatures. All is compromise. Once we put bees into a box, we have options — what do you do?

Bridget Beattie, PhD, NDB

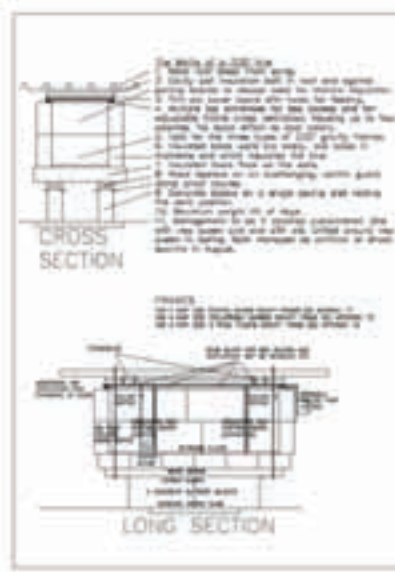


To clip or not to clip ... what is your verdict? Photo by David Wootton.

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3. 1# 600x600x38 foundation paving slab laid level on creosoted ground.
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5. Metal roof sheet and 2 holding down straps.
6. Spray paint in any choice of colour.
7. ZEST honey warmer.
8. ZEST nucleus box.
9. Nylon bags and honey buckets.

PARTS NOT NEEDED.

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Granulation in the Comb

When first confronted with honey that has granulated in the comb, the beginner will be a little stumped. Often these frames get put to the back of the shed, or worse discarded as worthless or useless.

Usually the granulation will be seen when uncapping the comb prior to extraction and it affects most of the honey. Sometimes though, with overlapping flows from different flowers contributing nectar, only small areas of the comb may have granulated. Do not think that you just can warm the comb to liquefy it prior to putting it in the extractor. By the time the honey has liquefied, the wax will have softened so much that the comb will have collapsed. However, drawn comb is valuable; it costs bees much effort and honey consumption to draw comb, so save and re-use the super comb from year to year. Granulation can be dealt with in two ways depending on whether the whole comb or just an area of it is granulated.

Whole comb granulated

This usually means that the wax comb cannot be saved, but recovery of the honey is still worth the effort. Remove the wedge top bar and cut out the granulated comb from the frame. Break it into lengths that will fit in a 30lb bucket, pack it full and tight and put the lid on. Put the bucket in your warming cabinet and set the temperature to no more than 55°C. If you do not have a warming cabinet, most electric cooker ovens can be controlled on the thermostat at these low temperatures and they will take a 30lb bucket. Domestic harmony is ensured if you clean the outside of the bucket first, then the oven remains clean and free from sticky honey. About twelve hours should do for the heat to permeate through and liquefy the contents of bucket.

At 55°C the wax will collapse to a floating mush on top of the liquid honey, but will not melt. Have no fear for HMF; this process is not going to push it beyond 40ppm — the acceptable limit (*Honey Regulations for England, 2003*). Let it all cool to about 30°C and pour it through coarse and fine filters to separate the wax out. Allow the honey to settle for twelve hours or so in the ripener (bottling tank) and bottle it as soon as you can.

Be aware that oven temperature dials are not very accurate; mine reads 65°C to give 55°C. Calibrate your cooker dial with a cheap electronic thermometer; the sort with a remote probe that are sold for tropical fish tanks at about £8 each. Above 60°C or so you risk unnecessarily overheating the honey and melting the wax, which will make a mess of the inside of your bucket. If you have a lot of granulated combs you might ask a local bee farmer to put your combs through his 'Apimelter', a tool specifically designed for this job and capable of taking several supers at a time.

Partial granulation

Here it should be possible to extract some honey and retain the wax combs for re-use. Extract as normal to get the liquid honey off, being careful to balance the combs in the extractor to prevent

unnecessary comb breakage. When you have uncapped the combs it will be apparent how much granulation there is on each frame, this 'dead weight' will stay in the combs so you should pair them across the extractor to maintain balance even when the liquid honey has been spun out.

It would be nice to get the bees to clear the remaining granulation out by placing the wet supers back on the hive. Unfortunately, most colonies will not clean out granulated honey unless there is a distinct shortage of food; the usual response is to merely pack new honey around it, thereby continuing the problem. Spray the combs liberally with water so that both the granulated honey and adjacent cells are wet. This will start to dissolve the granulated honey and provide a reserve of water in the comb. The bees can then fully clean out the frames when they are placed

back on the hive. Repeat the water spraying if necessary to ensure all the granulation is cleared.

Daniel Basterfield, NDB, Devon BKA



Avoid creating a sticky mess by cleaning your bucket before placing it into your oven at 55°C. Photo by Dan Basterfield.

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Learning from Others:

Education and Training Our Way

Educating and promoting the craft of beekeeping for the benefit of our membership and the general public has always been the driving force of Vale and Downland Association, but even more so after we became a registered charity in 1991. In the absence of having our own association apiary the majority of education for our members and for members of the public had been achieved through members opening their private apiaries.

In more recent years there has been an upsurge of public awareness of the importance of honey bees in the environment and a subsequent interest in taking up the craft of beekeeping. It was therefore decided in 2008 that we should try to find a venue that was suitable to turn into an association teaching apiary. By having a teaching apiary it was felt that we could then further our teaching of beekeeping. Later in that year we were fortunate to be offered two apiaries by a farming family sympathetic to our objectives of teaching beekeeping to our members and to the public.



Apiary 1, designated as Vale and Downland Teaching Apiary, is for the benefit of our members and as a means of providing Open Days for members of the general public to familiarise with bees in a natural environment.

While work was progressing with the preparation of the two apiaries it was decided that we should go another step forward by arranging evening classes. The first of these took place over a four-month period on one evening per month with at least 25 attendees. Apiary Managers and a Training Co-ordinator were appointed to steer and develop the education project and the apiaries. To cater for all training needs the appointed members also attended 'Train the Trainers' and other events provided by the BBKA and Fera. The benchmark adopted for all our training is

the 'Course in a Case' or 'Training Modules' as provided by the BBKA.

At an early stage it was essential that rules and conditions of use were established for both the 'Teaching Apiary' and the 'Beginners' Apiary' and that the purpose of each apiary was established. The established purpose of our Teaching Apiary is:

- ❑ To enable members to gain practical experience.
- ❑ To provide education, training and promotion of beekeeping.
- ❑ To provide a permanent location for association hives and equipment used for teaching and honey production.

The established purpose of the Beginners Apiary is:

- ❑ To provide an area for beginners to put their first hive having completed a winter evening training course lasting eight weeks.
- ❑ To enable each beginner to establish a nucleus of bees obtained from a reputable source and gain practical experience in managing a hive for a full season under the mentorship of experienced beekeeping leaders appointed by the Apiary Managers and Training Co-ordinator.

Education plan

The overall education plan starts with four practical evening sessions. These provide an 'Introduction to Beekeeping' so that prospective beekeepers get an early opportunity to see inside a hive and meet some bees. Hopefully, this is followed by



Apiary 2 was designated as a Beginners' Apiary solely for any association member who was starting their first year in beekeeping. Photo shows beginners taking delivery of Nucs. Photos by Lilian and John Valentine.

attendance at the theory winter evening classes. The objective and aim of these members is to take delivery of a nucleus of bees in April/May of the following spring. Classes are held on one evening per week over an eight-week period and they cater for twenty students. A one-day practical session teaching making up of hives and frames is also included.

The aim of the overall education plan is that the association has more experienced beekeepers that are able to pass on the knowledge of beekeeping with confidence to future beginners.

Seasonal training of beginners

Beginners spend the first hour of training at the Beginners' Apiary every Saturday afternoon working on their own hives while being supervised by experienced leaders. Beginners who have their hives at their own site or at home can also attend to observe those under training and to later, when working on their own hives, put into practice what they have learnt.

All beginners are then given the opportunity of gaining further practical experience during the afternoon by performing designated tasks at the Teaching Apiary as part of normal seasonal management (i.e. swarm control etc). This is also under the guidance of experienced leaders, who are allocated to a group of four or five beekeepers for the whole season to ensure continuity of teaching and recognition of results.

Each group comprises a group leader, an improver and one or two beginners. All the experienced group leaders have recently passed their BBKA Basic Beekeeping Assessment.

Public open days

On the first Wednesday of the month during the summer members of the public are invited to attend our Teaching Apiary where they can observe hives being opened up and experience the handling of bees if they wish. Each attendee is provided with full protective clothing. Experienced beekeepers lead these meetings.

Lilian and John Valentine,
Vale and Downland BKA

Our Diamond Queen Bee

I saw the flyer and thought what a great idea: Wendover Celebrates Carnival Day complete with a float parade, showground full of stalls and an evening concert. The theme was the Queen's Diamond Jubilee and the Olympics. The Mid-Bucks Beekeepers have held monthly meetings in Wendover for nearly sixty years, so I thought why not get involved?!

We would need a lot of people! Like all associations there is a dedicated hard core of members, usually the committee, who turn out for everything. But a plea went out to all members and people came forward to help; we were in business. The first meeting was held to pool ideas. You may think you know people but my goodness, throw a new idea into the room and you will be amazed what happens. Members of our association, whom I had known for years, suddenly revealed their alter egos. We found ourselves talking about something other than swarming or the weather! There was an artist, a builder, a textile art tutor, a sculptress and even an ex-rave event organiser. We decided to split our involvement into two teams; one would organise a float for the parade and the other a stand in the showground. The plan was to have a trailer decorated as a meadow complete with wild flowers, a queen bee and lots of worker bees. The first couple of meetings were very lively. I quickly realised we had many ideas and lots of enthusiasm. Our sculptress began to talk about armatures for the bees and a chap who had worked on set designs was constructing a shopping list of materials he would need to build the most convincing fake meadow. The 'sensible' members of the group queried how much this would all cost!

We wanted a large throne for our queen bee, who would preside over her meadow of wild flowers and bees. The finishing touches would be a skep and a WBC. Beekeepers wearing their suits would walk alongside the float puffing out red, white and blue smoke, and beekeepers' children would be invited to walk with us dressed up as little worker bees. A sound-system would play bee-related and honey-related music.

We had seven weeks to build the float; the enthusiasm and ideas kept surprising



Photos by Geoff Hayward-Smith

me. Even Betty, the Land Rover, who would pull the float, was to be decorated with giant yellow strips and five feet long antennae!

The showground team had planned a demonstration hive, activities for children and displays of hive products and all things beekeeping. Our chairman decided to include a flying bee display with views for the public on all four sides of a mesh tent. The crowds were going to be seriously impressed by the efforts of Mid-Bucks Beekeepers. Mind you, the risk-assessment form was interesting!

The borrowed trailer for the float needed boarding so it could safely anchor the throne. We also needed materials for the float and costumes for the children. The committee had agreed a sum of money but we knew we would need more, so it was time to go begging and borrowing. A local builders' merchant gave us all the timber we needed for boarding and signage in return for a bit of advertising. By luck, one of our members had a fascinating warehouse full of unused and interesting items. I managed to purloin artificial grass and lots of plastic sheeting to make the flowers. Poppies, cornflowers and daisies had been designed by our sculptress, who I discovered was a graphic designer specialising in product design. That explained everything; she had a special vision to transform plastic bags, soft drinks bottles and even pizza bases into believable flowers. Local teenagers were forced to eat as many pizzas as possible to help with production of the flowers. They could not believe their luck!

was made from charity shop clothes, old curtaining and netting. Her four feet long wings were beautifully embellished with iridescent material and couched with threads. She even had an enormous honey dipper as a giant sceptre. Each of the giant bees was made from chicken wire covered with papier mâché. They were then painted several times and had antennae, legs and wings attached. The sight of grown men discussing how to facsimile wax glands onto a three feet long bee was one to behold!

As parade day approached all stops were pulled out; signs were painted, pompoms made for pollen baskets and even more flowers were made. Our ex-rave event organiser had obtained a sound system fit for Glastonbury. All the children were happy with their outfits, especially the little girls who had frilly tutus and glittery wings. What I had not realised was that one of our group had been secretly planning an outfit of his own. He turned up on the day in a huge hairy drone outfit complete with an enormous head, multiple eyes and five feet wings; a marvellous specimen of natural selection ready for a congregation area!

The day came, the crowds loved the float and we smoked our smokers (minus colour; the Red Arrows had used up the national stocks this year!) the whole route. Was it worth it? Well, we certainly made our presence known in our area. Did more people come and ask about bees? Yes they did. Did people understand more about wild flowers? Yes they did. There was a different and new cohesion among members with enthusiasm to show the general public an alternative side to beekeepers. It was great fun to organise and share the unknown talents within the Mid-Bucks BKA. Oh, and by the way, we won First Prize for the float!...

Our queen bee's custom designed suit

Jean Savigar, Mid Bucks BKA

Going Wild: Ripening Autumn Fruits

September is the month when the bees' hard work pollinating plants, and the plants' hard work growing, all starts coming to fruition. The garden air is warm and sweet with aromas, vibrant with a contented hum of millions of insects and the plants themselves seem charged with almost palpable energy that boasts an ability to handle a harsh winter. Laden with seed pods and fruit, the mother plants begin to loosen their grip on their progeny; they know exactly when to let go: the point at which the seeds are ripe with potential for germination and survival when conditions become right. It is almost as if they care that their offspring survive.



The crocus, a much-prized blossom both by man and bee! Photo by David Wootton.

Apples, pears, plums, damsons, gages, nectarines, apricots, strawberries, raspberries, blackberries, cranberries, lingonberries, kiwifruit, grapes, melons, almonds, cobnuts, filberts, quinces, medlars ... take a breath, and the more unusual fruits such as hawthorn berries, elderberries, autumn olives, strawberry tree fruit, Oregon grapes, passion fruit, pomegranates, rosehips, goji berries and sloes ... are all ripening this month! Some, such as cherries, mulberries, blueberries, blackcurrants, red currants, white currants, and gooseberries have already ripened. And who should we thank for this cornucopia? I think we all know the answer to this one.

Unripe fruit tastes bad, and ripe fruit tastes oh, so good; and not by chance. Motherplant wisdom has contrived that only the irresistible ripe fruit (seed inside will now be ripe) is eaten and the seed discarded, hopefully on fertile ground; ideally having first travelled several metres through somebody's alimentary canal to start a process of breaking dormancy. When seeds inside pods are ripe, the pod will become brown and papery allowing the seed to break free. So ingenious, and all designed to work beautifully without anyone needing to understand any of it!

Preparing fruit for fruit or for seed?

If you want fruit pulp for jam making, you have seeds left over. If you want seeds you have fruit pulp left over; so why not make this a dual purpose activity. This is one of my highlights of the year, and not only do I relish the thought of next years' seedlings, but I am left with an appetising if not bewildering array of fruit compotes, jams, syrups and beverages.

The fresh seed is best simply washed free of fruit, rinsed and mixed with about an equal quantity of compost and sand mixture, placed in a drainable container, with a rodent-proof wire mesh secured on top, and half buried in a bed outside, where it gets rain and snow. You can forget this over winter, but the following spring you need to check and turn over the mixture weekly for any signs of germination. As soon as you see sprouting, sow the seeds onto a prepared seed tray for propagation, somewhere out of direct sunlight, but still outside in the garden, again with a rodent-proof cover.

Growing for gold!

Consider something that has been grown for thousands of years, is prized for its beauty, medicinal, culinary and industrial uses, weight

for weight is more valuable than gold. Yet is legal! It is the stamen (pollen bearing filaments) of *Crocus sativa* or saffron, so named because in Tudor times, it was grown in Essex around a town named Saffron Walden.

These bulbs may sit nicely in a productive area next to, say, wild strawberries, between three and six inches deep in fertile, free draining soil with plenty of potash. You could mulch the area with comfrey leaves and keep weed-free, or (RHS advice) grow in a bulb frame or alpine house in a mix of equal parts of loam, leaf mould and grit. When these crocuses appear, in winter, they only bloom for one day, so keep a close watch. Pick, pluck (dry) and padlock!

Jobs for September

- Start to clip back or prune hedges, as from now until next spring there should be few or no fledgling birds left in nests which would otherwise be disturbed. If it is particularly warm, wait another month.
- Plant spring-flowering bulbs, ideally ones that can be naturalised into a wildflower meadow or grass, such as:
Anemone nemorosa, wood anemone (partial shade and moist soil)
Chionodoxa luciliae, glory-of-the-snow
Crocus chrysanthus (yellow crocus)
C. sieberi (crocus mauve with yellow stigma)
C. tommasinianus, (crocuses lilac to purple with yellow stigma)
Narcissus asturiensis (dwarf trumpet daffodil)
N. bulbocodium (hoop petticoat daffodil — for damp soils only)
N. cyclamineus (cyclamen-flowered daffodil)
Eranthis hyemalis (winter aconite, also flowers in spring)
Galanthus nivalis (snowdrop).
- Plant out all potted hardy perennials and biennials. This is the ideal month to establish most plants in all grounds; there is still plenty of growing season left and it tends to be wetter.
- Also plant out trees, shrubs and climbers. Remember to mulch plants that need to be kept moist on establishment, such as *Leptospermum scoparium* (manuka); it is also a good trick when treading in to leave a depression in the soil around the base of the plant to collect water when it rains.
- Sow hardy annuals for next year, such as *Calendula*, *Papaver rhoeas* and hardy perennials, particularly those which need winter chilling to break dormancy, such as *Succisa pratensis* and *Melittis melissophyllum*.
- In the kitchen garden plant out garlic bulbs as garlic needs cold temperatures to begin growth, and spring cabbages.
- When tidying your garden, move all dead leaves to a compost pile, so they do not attract fungal infections. Remove all mildew infected prunings and burn these rather than compost.



Sarah Holdsworth

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2012: A Retrospective on 'The Season That (Nearly) Never Was'

I have just written the last of a series of twelve beekeeping articles which have been published each month in the local magazine for our group of parishes. This last one has been all about the reasons for keeping bees and so I waxed lyrical about our craft and of how, in addition to the delights of handling and working with bees, it gives an insight into various scientific disciplines and marketing etc. As well, of course, as providing a supply of honey for the kitchen table. Had I based the article on this season, I would have had a very different tale to tell as I can honestly say that this has been the most challenging beekeeping year I have experienced! As beekeepers we are not well blessed for forage in this part of Dorset — we are just a mile, as the bee flies, from the coast in an area of prime grazing land where both beef and dairy cattle, and sheep abound. There are few agricultural crops grown and artificial fertiliser is liberally applied to the grassland to aid growth; some refer to this type of landscape as a green desert. During the twelve years that I was with the National Bee Unit and travelled to apiaries to carry out inspections I had often thought that we had chosen the most beautiful part of the country to live in, but one of the most difficult from the point of view of bee forage!

We started the season with high hopes as our colonies were all in good condition, although we had some concerns about an apiary where we had chosen, last autumn, to evaluate the efficacy of a recently licensed varroa control product. Normally we deal with varroa by biotechnical methods but, where we still have raised mite levels in autumn, we sometimes use licensed products to further reduce the level. Unfortunately, the product we used seemed to be less effective than our usual one and we encountered high mite levels in the spring, which necessitated shook swarms as a control method. We did these in March during that splendid period of warm weather. Shook swarming allows the sealed brood, and thus a significant proportion of the mites, to be removed. It also allows 'baiting' of the colony, to remove a number of the mites remaining on the adult bees — an all-round good solution. It can also delay swarming when carried out in the spring ... but not this year!

Meanwhile colonies elsewhere were building nicely but then had a rather sharp arrest of their development as the warm sunny weather came to an abrupt halt in April. The laying rate reduced substantially and, in some cases, queens stopped laying altogether and the spring stores were being rapidly depleted. This continued, largely uninterrupted, for the next five weeks but during mid-May, what brood there was, was accompanied by queen cells and so we carried out our planned colony splits. Some of our colonies were on double brood boxes to allow for splits to be made partly as a swarm control measure and partly to allow new queens to be raised.

When, in late May, we experienced another brief period of really hot and sunny weather we were confronted by swarming instincts from nearly every colony, including those which had been shook swarmed and those which we had split. In several cases colonies with queen cells swarmed but long before the queen cells were ready to be sealed. This behaviour was quite a surprise to us; the extent of swarming had rarely been experienced in over thirty years of keeping bees, and it clearly came as a surprise to many others we have spoken to. We had reports of similar things happening in Berkshire, Cambridgeshire, Surrey, Derbyshire and Devon to name but a few. The swarming we experienced had nothing whatever to do with colonies being overcrowded; we can only conjecture that the colonies were being very opportunistic when the weather suddenly improved.

So, at this point in the year we were left with a number of colonies that were queenless and we were hoping for the fine weather to continue so that, when the virgins emerged, they could get out and mate successfully. Several colonies failed to generate a virgin queen even though

subsequent inspection has shown queen cells which appear to have opened normally. We are left to ponder what happened to any queens which had emerged. Our hopes were further dashed as another change in the weather set things back again — cold, grey, windy days when virgins were unable to get out to mate.

As an aside, it is worth noting that we have once again been



*Above: Bramble — one of the mainstay crops of late summer.
Below: Rosebay willow herb — another late summer banker.
Photos by Ian Homer.*



trying to do some grafting this year. We were at a stock improvement workshop at the end of May and had great difficulty finding larvae of a suitable age to graft. The huge nectar income that had accompanied the good weather for the previous few days had resulted in virtually nowhere for the queens to lay as all of the empty brood cells were full of nectar. We had another try at home a fortnight later and again had difficulty finding suitable larvae. This time because the weather had been so cold for the previous ten days or so that queens had once again gone off lay. How commercial queen rearers have managed this year I cannot imagine.

I am writing these notes at the end of June. Most of our colonies are now queen-right, but just ten days or so ago we were in a parlous state in that nearly 70% of our colonies were without a laying queen and several colonies still had no signs of a queen. To help these, we moved in frames of eggs from other colonies as an insurance policy, though it is clear, in retrospect, that there were virgins in these colonies; they just took an exceptionally long time to mate and then start laying. We have taken no honey yet this year from what started the season as fifteen colonies (although there is perhaps about 100 kilos to remove in total) and just a few days ago a largish swarm arrived in our bee shed and took up residence in some spare equipment! It is not from any of our colonies in the home apiary and, apart from the church roof, there are no other bees in the village; its source remains a mystery. It is worth noting that roughly a quarter of our new queens which have been raised this

year have turned out to be drone-layers, but then opportunities for mating have been so restricted. We will closely monitor those that are laying well to determine whether it remains that way.



Polystyrene hives afloat. Photo by Zaz Greppi, New Forest BKA.

In one apiary which has always been clear of nosema whenever we have tested for it, we have recently identified its presence. We suspect the source to be a swarm which was brought in from Dorchester in late March but the prolonged periods during which the bees have been hive-bound will, no doubt, have increased the stress levels and made the disease more evident. I have just heard that June this year has been the wettest for over one hundred years but have yet to read the sunshine stats — certainly there have been far fewer flying hours available for our bees than usual. We have never

had to feed colonies in June in this area, until this year, and by all accounts, we are not alone in having to do so. To make matters worse, while the early flora this year was late, the later flora is early, e.g., we have had bramble in flower in our area for around three weeks earlier than usual. However, beekeepers are eternal optimists and we have high hopes that the bramble, clover and rosebay willow herb will combine to make the second half of the season more productive than the first half; if only it will stop raining. Despite the mating difficulties, we will certainly be entering the winter period with a higher proportion of this year's queens than usual which should auger well for next season.

Because of printing deadlines I have the luxury of being able to update these comments at the end of July — a month on but, until the last day or two, little has changed other than the widespread extensive flooding we have seen. It seems that some beekeepers have their hives sited on flood plains, but are still taken by surprise when those flood plains actually flood! However, there is some evidence that polystyrene hives, mounted on suitable pallets, are able to float serenely above it all! The bramble is still in flower as is the meadowsweet and, to my surprise, in this area at least, the broad leafed willow herb is outperforming the rosebay this year. However, the word 'summer' has been mentioned several times just recently and it seems that we may enjoy a few days of reasonable weather after all. Perhaps for beekeepers across the country a small crop of something other than rape will be possible.

We have started preparing our colonies for their autumn/winter state and are noting that some of this year's queens are now being superseded. It is quite clear that colonies are still raising drones so they must feel that they will have a need for them. We can hope that if the weather is on the turn then we may see better matings at the end of the season than those achieved earlier. Talking with other beekeepers, the matings of the queens seems to be a universal concern and many are fearful that, even if the queens lay satisfactorily for the remainder of this season, they may prove to be drone-layers next spring. We are aiming to keep as many queens as possible in nuc boxes over winter to give maximum insurance against drone layers.

Recently, I was asked to do an on-air interview with BBC Radio Devon about why the price of honey may be on the way up. "Was it due to 'the virus' or the weather?" I don't think you will be in any doubt what my answer was.

Ian Homer, Dorset BKA

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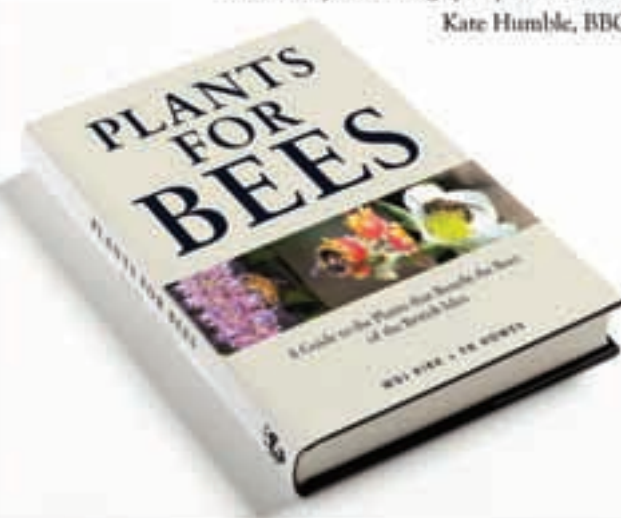
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Bee Improvement

Think of honey bees as a collective stock and then think about improving the standard of managed honey bees. This NBU Best Practice Guideline will give you some useful pointers on how we can all improve our bee stocks.

All beekeepers would prefer to keep docile, easily managed, disease tolerant and highly productive stock. If this is to be achieved they must work together as a collective. In comparison with other stockmen beekeepers have less influence on genetic balance because they have little control over which drones mate with their virgin queens. Beekeepers therefore need to work together in order to achieve significant levels of stock improvement.

Why not just buy in good quality queens?

Buying in quality queens from other counties or countries can be advantageous; a quick fix or a long-term solution. However, it can become an ongoing commitment. Importing for desirable traits to improve your own stock can be a better way forward, but there could be significant risks, such as pest introduction, spread of disease, effects of local cross-breeding etc., that need to be taken into proper account. BBKA does not support the importation of bees, but if you do import consignments of bees ensure that they have been properly certified and are accompanied by a health certificate as these represent low risk.

Start rearing your own queens

Successful queen rearing gives a feeling of great achievement, so within the context of a collective stock all beekeepers should be encouraged to do this. It is often the case that queens are reared from colonies making queen cells early in the season. This should be avoided as it will select for a propensity to swarm; not a helpful trait for colony management. Colonies should be carefully selected for beneficial traits, such as docility, good overwintering, low tendency to swarm, disease tolerance, productivity etc., before the removal of material used in any queen-rearing project. Check your record cards for what they tell you about these traits.

Beekeepers with only a few colonies

These beekeepers can rear queens from their best stocks by artificial swarm methods or by division as and when appropriate.

Two stocks are required for queen rearing

Generally, for most queen-rearing systems, two stocks are required: the 'breeder', where the young larvae are to come from, and the 'rearer' to develop them into queen cells. The rearer must be strong, have plenty of young brood food-secreting bees and is usually made queenless. Any strong colony making swarm preparations is suitable. Very young larvae are harvested from the breeder by grafting, using a punch technique, Jenter or Miller methods and then developed in the queenless rearer. There are techniques to enable the rearer colony to be queen-right, which enables the queen cells to be reared under a supersedure impulse, one of which is described within BeeBase www.nationalbeeunit.com. Full details of these and other methods can be found in suitable text books or on-line.

Key points for successful queen rearing

- Small scale beekeepers can form breeding groups, which also helps ensure an adequate supply of queens and stock for

beekeeping associations. They can also exchange suitable material to maintain genetic diversity over a larger geographical area.

- Select a system of rearing that suits your needs. Gaining confidence in any method is important, so joining a group to learn and even making mistakes together is a good way forward.
- Bear in mind that there are three impulses that cause bees to build queen cells:
 - **Swarming:** Swarm cells tend to be built of new beeswax in the swarming period, generally April to July. There may be between four and twenty, or even more.
 - **Supersedure:** These cells are well formed and generally larger than swarm cells. They can occur at any time of the year, but are more noticeable in spring or autumn. Usually between one and four are formed.
 - **Emergency:** These are built if the queen is removed from a colony when brood is present. The colony uses eggs or young larvae from worker cells, feeding them the same diet as a prospective queen and building out the cell into a distinctive hooked shape like a human nose.
- Maintain records to effectively select stock. Records should be maintained for day-to-day management, and must be kept for the use of varroacides and other bee medicaments. Records kept can be expanded to include stock assessments.
- Rear queens from selected colonies with high yields, good temperament, disease tolerance etc. Use your best colonies and not the colonies selected for drone rearing.
- Rear drones in colonies that are strong and have a good temperament. Inserting a frame with drone foundation will boost drone numbers. Better still use drawn drone comb. In smaller hives, such as the National, these combs can easily be obtained by using a brood box as a super in the previous season, extracting the honey and storing for later use. Do not use colonies from which you intend to take genetic material for queens.
- Start drone production at least three weeks before queen production to ensure an adequate supply of suitable mature drones for mating.
- Maintain genetic diversity. It may be necessary to introduce new queens or stock to do this, particularly if you are a small-scale beekeeper in a remote location.

Beekeepers who do not wish to graft

Those beekeepers who are not intending to graft or those who use Jenter, Miller and other similar systems and who only want a few queen cells can manage colonies to produce queen cells, which can be harvested and put in to queenless nuclei. This can be done by:

- **Inducing swarm cells:** A selected stock is built up in a double brood box. When inducement is required the brood is divided so that the sealed brood is in one of the brood boxes and the unsealed in the other. The queen is left with the unsealed brood and a queen excluder is placed between the two brood boxes. Swarm cells will be built. It helps if super storage space is

limited. Remember that if you do not remove or cull the existing queen before the queen cells are sealed the colony will want to swarm.

- ❑ **Inducing supersedure cells:** True supersedure generally takes place when mating conditions are not at their best, so harvesting cells from stocks that naturally do this carries some risks. However, we can induce this impulse by management. A selected stock is built up in a double brood box with a queen excluder and supers are added as required. When the colony is strong and the conditions are right the colony is re-assembled with the queen confined to the lower brood chamber by means of the queen excluder, then the supers are added and the other brood box is placed on top. The stock is not queenless and worker bees have access to all parts of the hive, so all the brood is properly cared for. A reduction of the queen's pheromones occurs in the top box because it is far away from the queen. This induces a supersedure impulse and though the cells built have the appearance of emergency cells they will have been built because of supersedure impulses. These cells can be cut out and used as required.



A carefully tended queen cell. Will you be rearing your own next year? Photo by David Wootton.

There are many debates about the benefits or otherwise of these systems, but to a varying degree they form the basis of queen rearing methods in current use.

Buying in new genetic material

- ❑ When buying in queens or a stock for genetic material, remember that it is a case of 'buyer beware'. If you have no experience of the source, consider recommendations, obtain references or make checks on the stock before you buy to help avoid disappointment.

“ Queens are often reared from colonies making queen cells early in the season. This should be avoided as it will select for a propensity to swarm; not a helpful trait for colony management. Colonies should be carefully selected for beneficial traits, such as docility, good overwintering, low tendency to swarm, disease tolerance, productivity etc., before the removal of material used in any queen-rearing project. ”

If importing bees for genetic material

- ❑ Only import to obtain beneficial genetic traits. Remember that your imports will influence neighbouring honey bees.
- ❑ Comply with the current import regulations found on BeeBase www.nationalbeeunit.com. Different rules apply for the EU and Third Countries, which are those outside the EU.
- ❑ Ensure the bees will meet your requirements.
- ❑ Use a reputable supplier. Recommendation or references may help you choose.
- ❑ You may need to check what is supplied before purchase.
- ❑ Bear in mind that importing colonies, nuclei and packages

carries a higher risk of disease introduction in comparison to importing queens and attendant workers.

- ❑ Remember that health certificates only relate to freedom of visible signs of American Foul Brood, *Tropilaelaps* mites and Small Hive Beetles.

If you collect swarms

- ❑ Swarms can influence your stock. Swarms of unknown origin should be hived in a separate or isolation apiary to enable disease checks to be made. They can also be re-queened with surplus queens from a queen rearing programme before introduction to established apiaries. There is a separate Best Practice Guidance in May 2012 BBKA News on *Taking and Hiving Swarms*.

Surplus queens and stock

- ❑ If you are selling or supplying surplus queens and bees, describe them accurately and ensure that they conform to the standards set. Be prepared to let buyers examine stocks to satisfy themselves that they are disease free and suitable.
- ❑ Maintain a record of all movements to ensure traceability. A printed record is included in the advice note *Advice for Obtaining Honey Bees*, or if you are registered on BeeBase, records can be kept within your personal record.

Defensive colonies

- ❑ If colonies are defensive or show undesirable traits re-queen with a different strain of honey bee. If you do not wish to rear or buy in queens, just culling the queens in the worst 25% of colonies and letting them re-queen themselves will result in improvement over time.

**National Bee Unit,
Best Practice Guideline**

BBKA Examinations Board Examination Dates 2013

March 23rd 2013 **Module 1,2,3,6,8 Examinations**
(Applications in by 10th February 2013)

November 9th 2013 **Module 1,2,3,5,7 Examinations**
(Applications in by 30th September 2013)

**Advanced Certificate in Beekeeping Husbandry –
15th/16th June 2013**
(Applications in by 28th February 2013)

**General Certificate in Beekeeping Husbandry and
Microscopy**
Date by arrangement with the Examinations Board Secretary
(Applications in by 28th February 2013. Microscopy Assessment
takes place in autumn)

Basic and Junior Certificate
Date by arrangement with the County Examinations Secretary
(Applications 1 month before assessment)

Location, Location, Location

The 35th BBKA Spring Convention was notable for the change of venue from Stoneleigh Park to Harper Adams University College at Newport in Shropshire. Weighing-up all the comments that we have received I think we can claim



Harper Adams University College. All photos by Roger Cullum-Kenyon.

it was a great success, but there were some glitches and shortcomings. Perfect it was not, but it was pretty good all the same taking into account the challenge facing the Spring Convention Committee Team. I want thank them for all their hard work over the year. It is a long haul, planning and organising, which starts even before the current year's event has taken place.

Changing venue was not without its emotional aspects. It had become clear over the last few years, that we had out-grown Stoneleigh; the didactic facilities being a particularly poor element. We looked at several other venues including Warwick University, and the NEC but in Harper Adams (HA) we found a good balance between good lecture and seminar rooms and an adequate exhibition area. That combination is hard to find. The HA lecture rooms offered increased capacity e.g. The Queen Mother Hall (400 seats v 280 at Stoneleigh), the Teaching Block lecture hall (175 v 140) and the RFA lecture hall (125 v 100) giving us a healthy increase of 35% in total. The cost structures also beat those at Stoneleigh. In 2011 we paid more than £4000 to equip the lecture rooms with projection and sound facilities; at HA the rooms came ready kitted-out. Likewise the 2700m² area exhibition hall space was up 50% on Stoneleigh, and all under one roof. Extensive on-site accommodation and catering facilities at sensible prices were also an important draw.

Overcrowding

One problem that we were unable to leave behind at Stoneleigh was the frustration encountered by some delegates unable to get into the lecture of their choice

notwithstanding the increase in capacity. It is difficult to 'guess' which lecture will draw the greatest crowd. We underestimated the thirst for basic knowledge with so many new to beekeeping and so some key 'basic' lectures were heavily over-subscribed while some 'prestige' lectures had spare seats aplenty. It is unlikely that we will completely solve this problem, but we are examining possible solutions to ease it; no promises here as to what we will achieve, but we intend to improve in this area. Many delegates have noted the importance of planning their visit well in advance and in



Post-graduate centre.

showing up good and early to ensure a place in the lecture hall.

The campus

It was inevitable that the new venue would be disorientating for some delegates, notwithstanding vastly better on-site signage than we had at Stoneleigh. The inclement weather did not help either; this made walking from one part of the campus to another seem longer than it was. In fact, HA is more compact than Stoneleigh. For example, walking from the Rank Centre to the NBC is more than 700 yards while the biggest distance at HA is from the Queen Mother lecture hall to the Exhibition Hall, and this is just over 300 yards. With better weather next year (one can hope!) and greater familiarity, this impression should go away. Parking will be re-examined and we need to improve the facilities to bring cars to the collection point for bulky purchases; all quite possible now that we have a better 'hands on' feel for the site.

The exhibition

The greater space in the exhibition halls was much appreciated. Thorne's pre-order scheme was a great success and helped improve things for other traders by dampening down the early morning panic for bargains. We need to improve stewarding in the Exhibition; having the doors open for long periods compounded the unseasonably low temperatures and made the halls rather cold. A catering point

in the exhibition hall is a must, too. Telecoms are not optimal in the Newport area, particularly when lots of people are on the phone. This, together with the O2 mast being down, caused real problems for the use of card machines, but the establishment of the HA 'Bank' got us through on the day.

Catering and accommodation

With tea and coffee points in the teaching block and the Graze and Refectory outlets, we were well served. There has been almost universal praise for the quality and value of the catering; the Friday night dinner was notably good. HA report that takings over the weekend were a record for the college, so they were happy too! We ended up providing almost 600 room nights on site, which undoubtedly led to a good social ambience, although the bar was remarkably under-used; perhaps we need to sign-post it more clearly! Overall, delegates were happy with their rooms; more rooms will be available next year, and of course early reservation is a must.



Faccenda building.

The staff

Perhaps the peak of delegate (and the organisers') satisfaction was the 'can-do' attitude and helpfulness shown by the HA staff, without exception. This made planning and setting-up the event so much easier given that we were starting from scratch, and problem-solving and service over the weekend were unstinting. The college management, right up to the Principal, were ready to deal with the issues as they arose; we owe them a vote of thanks.

Next year

It will not come as a surprise to learn that we have booked HA for the 2013 Spring Convention. Please note the dates are: 12, 13, 14 April 2013. We met difficulties and there are areas for improvement but the Committee is confident that these have been identified and we can work with HA to improve if not totally eliminate them. As I have mentioned we owe a great deal to the volunteers who make it happen. We need new blood, ideas and enthusiasm to build on the success of the event. If you can help, even if just in a small way please speak up; we need you!

Tim Lovett,
Chairman, Spring Convention Committee

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Adding Value to Beekeeping: Making Cold-processed Soap

We continue our series of articles on bee-related produce with a super introduction to the joys and delights of soap-making. This article, by professional soap-maker Dr Sara Robb, cannot fail to inspire you to try your hand at this wonderful art. So, read on ... and be creative.

Value-added products can provide an important supplement to the income of beekeepers. Cosmetics made with bee products are becoming more and more popular. For many, their daily beauty routine begins with washing the face. Honey soap gently cleanses skin, provides anti-oxidants and, because of honey's emollient properties, leaves skin well moisturised. Making your own honey soap is not difficult using the method described in this article. You can make the following recipe for cold-processed soap with minimal equipment and use the soap the same day you make it.

Equipment

Cold-processed soap can be made using many of the items you may have in your home (illustrated in figure 1). There are two required pieces of equipment; a scale and a hand blender. It is advisable to have a mixer dedicated for making soap if you plan to add fragrance. Other things you need include gloves, a heavy glass jar or Pyrex jug, a large glass mixing bowl, wooden spoon, metal spoons, a pan, cling-film and some old towels. You will also need to melt the oils in either a microwave or on the stovetop. Either will work and does not alter the quality of the soap.

Ingredients

The ingredients used to make soap are very simple. Soap can be made from fats, oils and waxes through a chemical reaction with hydroxide. Historically, animal fats and potash or potassium hydroxide would have been used to make soap. Today we have access to a large variety of vegetable oils and use sodium hydroxide to make soap. You can buy oils for soap making in the supermarket or in ethnic food shops. Sodium hydroxide is available at chemists, as well as online. Sodium hydroxide is also called caustic soda and is dissolved in water to make a lye solution. Look for sodium hydroxide with a purity of 98% for the best results. The water you use to make the lye solution may be bottled water, rain water or tap water if you have soft water.



Figure 1. The basic soap-making equipment you will need, which can be found in most homes. All photos by Dr Sara Robb.

While only oils, fats and waxes and the hydroxide are involved in the chemical synthesis of soap, various other ingredients can be added to make soap more enjoyable to use. You may wish to add colour, fragrance, honey and other bee products to your soap. These additional ingredients (such as witch hazel and propolis; see figure 2) can be added in different combinations to create innumerable soap varieties.

Bee products add a number of qualities to soap, including fragrance, colour, moisturising properties and even anti-oxidants to keep you looking young. Honey, beeswax and propolis can be added to soap to create luxurious value-added products to sell alongside your honey. Although beeswax is a wax, it does not readily saponify and because of this it can be treated as an additional ingredient.



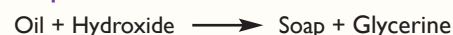
Figure 2. Witch hazel and propolis soap ingredients: sunflower oil, 1; olive oil, 2; sodium hydroxide, 3; coconut oil, 4; cocoa butter, 5; propolis tincture, 6; heather honey, 7 and witch hazel solution, 8.

Saponification: the chemical synthesis of soap

The chemical synthesis of soap from oils, fats and waxes is called saponification. When mixed with hydroxide, two products are synthesised: soap and glycerine.

The amount of hydroxide needed to make soap varies for each oil, fat or wax. This amount is determined empirically and is reported as the saponification value. Recipes for making homemade soap have used the saponification values of the oils in the recipe to calculate the amount of hydroxide needed. Because each oil, fat and wax has a unique saponification value, you should not substitute these ingredients in a given soap recipe.

Saponification:



In addition to having different saponification values, different oils also add different qualities to the finished product. Coconut oil gives soap a rich lather. Palm oil, tallow and other solid oils and fats make soap hard. Liquid oils, such as olive oil and sunflower oil make soap more emollient. Most recipes consider these qualities and are made of a blend of oils.

The rate of synthesis is related to the concentration of the sodium hydroxide solution. The amount of hydroxide does not vary but the amount of water used to make the solution can be adjusted. Traditionally, the hydroxide is dissolved into water to make a weak solution. Using a weak solution of hydroxide to make soap slows the rate of the chemical reaction and adds extra water to the soap. Soap is often cured for weeks for two reasons. The first is to ensure the chemical reaction has gone to completion and the second is to allow the extra water to evaporate. This process can be observed by measuring the pH of the soap as it cures and the hardness

Recipe for witch hazel and propolis anti-bacterial soap²

Ingredients	Imperial	Metric
Sodium hydroxide (NaOH)	4.6 oz	130 g
Water	8.3 oz	235 g
Olive oil	14.6 oz	415 g
Sunflower oil	7.9 oz	225 g
Coconut oil	18.5 oz	525 g
Witch Hazel	1 tbsp	15 ml
Cocoa butter (optional)	0.2 oz	5g
Heather honey	3 tbsp	45 ml
Propolis tincture	5 drops	
Coconut oil	Small nub for greasing pan	

Making the lye solution

1. Put on your gloves before you begin.
2. Place a large glass jar or Pyrex jug on the scale and weigh the water into it.
3. Place a small plastic or glass bowl on the scale, and carefully weigh the sodium hydroxide into the bowl. Add the sodium hydroxide to the water and mix with a wooden spoon until the crystals are suspended in the water (The solution will warm up as the

sodium hydroxide dissolves into the water).*

Measuring the oils

1. Place a large glass bowl on the scale and add the coconut oil.
2. Weigh the cocoa butter into the same bowl (if using).
3. Transfer the glass bowl with the solid coconut oil to a microwave or bain-marie and heat just until the oil has melted.

4. Weigh the olive and sunflower oil into the glass bowl containing the melted coconut oil.
5. Add the witch hazel, heather honey and propolis to the oil and stir.

Mixing the soap

1. Pour the lye solution into oil mixture. Stir slowly with a hand blender keeping the power turned off.

2. After you have added all the lye, start mixing with the hand blender power turned on.
3. The soap mixture will become more opaque and begin to thicken.
4. Stir until the soap mixture is like a cake batter.
5. Pour the soap mixture into a flat pan.
6. Wrap the soap with cling-film and cover the soap with layers of towels to keep the soap from losing heat.
7. When the soap has completed processing, unwrap it and cut it into pieces.



Figure 3. A selection of soaps made with oils, hydroxide solution and honey. Left, top down, honey with: wild rose, apple blossom, lavender; Right; honey bee soap (top) and witch hazel and propolis soap.

Safety note:

*Take care not to inhale the fumes and make sure the lye solution it is out of reach of children and pets. Take care to avoid splashes and if the lye solution splashes into your eyes immediately wash them for several minutes with clean water.

of the soap as the excess water evaporates. The pH of the soap will begin at pH 14 and finish between pH 8 and pH 10.

The method presented here is a modification of the traditional cold-processed soap method, which uses a more concentrated solution of hydroxide.¹ Using this modified method, you can make soap and use the soap on the same day. The saponification reaction goes to completion as the soap processes and there is no excess water, so no need to cure the soap. The soap will drop in pH from pH 14 to pH 10 or below, the same day you make the soap.

Method

When making soap the first thing to do is to make the lye solution. Pour the sodium hydroxide (NaOH) crystals into the water and stir until the hydroxide is suspended. Put the lye solution to the side and get the oils ready. Measure the oils by weight. Slowly pour the lye solution into the bowl containing the oils while stirring with a stick blender with the power off. After adding all the lye solution, begin mixing with the power on. Continue to stir until the soap mixture begins to thicken. The soap will

begin at a consistency of a thin sauce and continue to thicken until it is like custard and will then resemble a thick batter. Pour the soap into a pan and cover the pan with cling-film and towels to keep the soap from losing heat. The soap will continue to warm until it heats up from the centre to the edges. This is the saponification reaction converting the oil into soap. Once the reaction has reached the edge of the pan, unwrap the soap and allow it to cool.

Witch hazel and propolis soap has a dark brown colour and a slight smell of propolis. Use propolis soap on a regular basis to remove accumulated sebum. The anti-bacterial and anti-seborrhoeic activity of propolis can help prevent acne. Witch hazel is anti-inflammatory and can reduce redness and swelling, while the anti-oxidants in this soap will also help reduce signs of aging. Witch hazel and propolis soap is very good for oily skin types. For other skin types, a more moisturising soap can be made with the same recipe by including cocoa butter in the recipe. The witch hazel, heather honey and propolis can be omitted or other ingredients may be added in their place. If you would like to add fragrance to this soap recipe, add approximately one

tablespoon (15 ml) of fragrance oil or essential oil. Experiment by adding different combinations of honey and fragrance to make different varieties of soap. A selection of honey soaps are shown in Figure 3.

Selling honey soaps

In order to sell the soaps and other cosmetics made with bee products, you need to comply with the legislation regulating the sales of cosmetics in the United Kingdom.³ Soap needs to pass a safety assessment and be labelled correctly with ingredients and the producer's contact information before you can legally sell it in the European Union. This topic will be discussed in the October BBKA News.

Dr Sara Robb,
London,
sara@bathpotions.com

References

1. Robb SJ. *Dr Sara's Honey Potions*. Northern Bee Books, 2009.
2. Robb SJ. *Beauty and the Bees*. Northern Bee Books, 2012.
3. Cosmetics Directive 76/768/EEC.

Notes from a Clifftop Apiary

Give bees a disused chimney, or a fissure in a cliff face, or a deep space in a hollow tree and they will build comb up to, or rather down to, a couple of metres in length. And if in their natural unmanaged state they're prepared to do that, then why stint on giving them lots of space in the spring? I've never seen any point in delaying giving bees room for expansion. Lots of it. Brood space for the nest and storage space above for the honey. And in plenty of time. Give them elbow room. Head room. Dormitories. Lumber rooms. Raise the roof, literally, so the impulse to swarm gets lost in the rafters. There is a drawback though. Big honey storage boxes require a strong back. A brood box filled with full honey frames can weigh well over twenty kilograms. Lifting that could do you damage. In the past I've had to take out the frames individually and half empty the top box before I could lift the whole thing away. Commercial beekeepers whose management strategy aims for around 150 pounds, or 75-plus kg, per hive and who calculate their total harvest in tonnages, will have their own removal system. It's probably called 'two-men on the job'. The hobbyist beekeeper, however, may well have to call on the help of a partner in taking off the honey in preparation to extraction. This can bring its own difficulties:

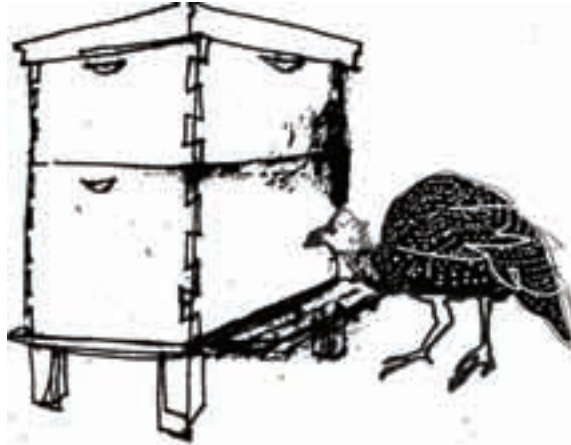


Image by Rowland Molony.

'Do you have to stand on that chair? It's not safe. If you fall off I won't be able to pick you up, not if you've got a box full of honey on top of you ... I'm getting very sticky here ... There's a bee's bottom sticking out of one of these hexagonals, does that matter? ... Aren't people going to complain if they find bits of bee stuck to their teeth? ... Are all these drips going into my kitchen? ... Who's going to be cleaning the kitchen floor I should like to know ...'

Some parts of the extraction process can be enjoyable. Lining up the clean jars within arm's reach. Sitting on the stool and opening the valve on the settling tank. Watching the rope of liquefied gold folding down onto itself and rising to the top like a sunny smile to the glass lip. Bounty. Riches. Freely given from Nature. This is a form of richness that has no connection with economics.

Another gift freely given is the swarm. Being called to come and collect one is usually a pleasure. But it helps if the phone call comes to me rather than to Wife. I came into the house one late morning to find her on the phone.

'It's where? It's hanging in a tree. Well, keep your pets and your children away from it. How big is it? Football? Rugby ball? A pudding. What sort of a pudding? A steam pudding? With raisins in it? Lots of raisins. And currants. Currants and raisins. That would make it like a Christmas pudding. Would you say it was like a Christmas pudding? A Christmas pudding in the tree. I see. And how many would you say there were? No, you don't have to go out and count them, just a rough ... what? Oh ...' She hands the phone to me. 'I think she's gone.'

I didn't get a swarm this year. Given the prices currently being

charged for a five-frame nuc, a swarm suddenly becomes a pretty valuable item. Capturing and retaining your own now becomes important. To that end it's worth having a bait hive. Each spring and summer I leave a bait hive out on the plot. Several times over recent years I have come to the allotment and found a previously empty hive suddenly full of bees. Presumably, one of my hives had swarmed and immediately found a new home just two doors down. Very convenient for all concerned.

The wildlife has kept us watchful on the allotment this summer. We have a family of foxes. I see the faces of the cubs peering at me from behind the rain storage butts. A pheasant has been enjoying dust baths in the cold ashes of my bonfires. For a period, until it got fed up with being disturbed by my presence, a quite large adder used to sun itself between my courgette plants. I've watched a pair of peregrines circling high overhead. In my corner of the allotments there are green finches and

blackcaps, fly catchers and tree creepers. And a robin who'll take cake crumbs off my palm. Just as his dad did last year. Maybe it still is the dad. How can you tell robins apart? Only when there are two of them on the bird table, one feeding the other.

The presence of bees doesn't in itself attract wildlife. Although I'm told guinea fowl are not a good idea near an apiary. A guinea fowl has been known to stand in front of the hive entrance and pick off every bee that showed herself on the landing board until he was full. There's also been a dolphin in the bay. I've spotted his gunmetal grey back arching through the waves, the spume from his sighs flying away in the breeze. A bit of a media tart, he's called George. He turns up each summer and does the season, gets his picture in the papers, and performs a daily dally with the swimmers just off shore.



Every now and again Wife has to make her feelings known about the clifftop apiary.

'I'm a bee widow. Did you know that?' I ask her what she means. She says, 'A bee widow, you know, like a golf widow. I'm one of those women whose husband is always off out and away — in your case, with bees.' 'Isn't that better than being in the pub all the time? It could be worse. I could be into Amateur Dramatics. Or I could be a fitness fanatic.'

She gives me a cool stare. 'Or you could be one of those husbands who have a really big tool box and they're always putting up shelves and building cupboards and fitting new kitchens and bathrooms.' 'You want me to fit a new bathroom?'

'Absolutely not,' she says.

Rowland Molony, East Devon BKA

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Thoughts on Varroa Mite Counting

How many times in a year do you count varroa mite drop in your hives? The following experiences seem to suggest that we cannot rely upon isolated varroa mite drop counts to help determine the varroa load in our colonies.

In Patterson's Page in July 2012 BBKA News, Roger emphasized the importance of varroa control. I would like to enlarge on two or three points. It is not surprising that some hives have high levels of varroa infestation when it has been advocated that a drop count of not more than four per day in December renders oxalic acid treatment unnecessary. For eight years I have been counting the varroa drop daily from my two to four hives and have observed the following:

There is virtually no varroa drop when no brood is hatching, regardless of the number of varroa present. This can be seen not only over the winter shut down, but after a swarm or other broodless period. After the last brood of the old queen emerges, the varroa drop will be zero or nearly so. This will persist until the first brood of the new queen emerges, typically two or three weeks later. All of the mites in the hive were waiting for the first larvae of the new queen to be capped, so when this brood emerges the total drop can be quite alarming. Then after two or three days the drop will again be close to zero until a further fourteen days.

The apparent lack of mites during broodless periods shows conclusively how unwise it is to miss the winter oxalic acid treatment. If brood is present all winter, then formic acid treatment is indicated.

Estimating varroa numbers

When estimating the number of varroa mites present, it is accepted that neither of the usual methods is precise. I have found the drone cull method is very difficult to apply and subject to large errors. The drop count method is much simpler and should be more consistent. It seems to me that it is not important to know the total number of varroa present as the rate of increase of the population can be accurately determined and the urgency of treatment known. There is, however, one important proviso. The drop count must be measured over at least one varroa breeding cycle of 14 or 17 days, the time the varroa spends in capped brood. There have been instances when a seven day drop average indicated that no treatment would be needed for three months, but the average over the next seven days indicated urgent treatment. An average over only four or five days can be badly misleading.

Plotting the rolling 14 day average drop on semi-log graph paper is remarkably revealing. An apparently random scattering of points on a linear graph plot becomes a clearly defined straight line on a semi-logarithmic plot from which the number of days it has taken for varroa numbers to double can be read off.

Reducing varroa levels

Given that varroa are not a single strain of a single species, allied with the variable resistance shown by individual bee populations, my experience is unlikely to be shared by all beekeepers, but is surely not unique.

I find that in the spring, after a month or two of less than one varroa/fortnight, the numbers double every six or seven days. I assume this to be due to the presence of drone brood. This rate continues typically until early or mid June, when the period to double becomes around twenty days. By the end of June the daily mite drop has been around twenty, indicating the need for treatment, but the main nectar flow is going strongly, so no chemical treatment can be considered without loss of some honey crop. It should be noted that these numbers refer to hives which had zero drop between 30 December and 22 March, then a total of seven until 14 May, so the starting load of varroa was very low.

Clearly it is important to apply some varroa treatment in spring and early summer, as recommended by all the authorities. The strong influence of drone brood on the total number of mites suggests drone brood culling would be an effective means of reducing varroa mite levels, and preferably the brood frames in the hive should not contain areas of drone cells. A trap frame would satisfy the bees' urge to produce drones, which can then be removed without disturbing the worker brood.

An artificial swarm for varroa control is also effective, and can be used to increase the hive population by maintaining two laying queens for some time before re-uniting the hives. This, however, will reduce the honey crop due to the unbalanced populations in the two hives after the split; in the original hive some flying bees will have to revert to nurse duties and in the new hive the non-flying bees will be without a laying queen for several weeks.

Thymol vaporization is temperature sensitive; between 25°C and 15°C the concentration in air drops by a third. Also, the concentration lethal to varroa is not much less than that which bees will tolerate. The distribution of thymol in the hive is determined by the natural convection current of air caused by the heat of the brood nest. Cool air from below rises up through the nest towards the roof. Above the nest it evaporates some thymol, then spreads to the sides and descends down the walls of the hive where resistance to flow is least. Out of the sun or at night, the walls will be much cooler than the brood, and some of the thymol

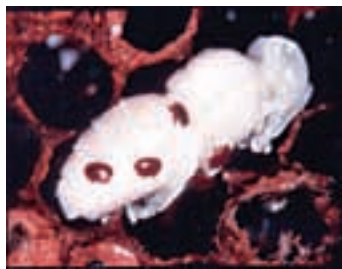


Image of varroa mites on a honey bee pupa supplied by Kika De La Garza at the Subtropical Agricultural Research Center Weslaco, Texas, USA, published courtesy of Wikimedia Commons.

There is virtually no varroa drop when no brood is hatching, regardless of the number of varroa present. The apparent lack of mites during broodless periods shows conclusively how unwise it is to miss the winter oxalic acid treatment. If brood is present all winter, then formic acid treatment is indicated.

Tony Kirkby

will be condensed on the sides. The air then returning up through the brood nest will contain less thymol, determined by the temperature at the base of the hive. The varroa tray usually smells strongly of thymol.

“ It is not important to know the total number of varroa present as the rate of increase of the population can be accurately determined and the urgency of treatment known providing that the drop count is measured over at least one varroa breeding cycle of 14 or 17 days, the time the varroa spends in capped brood.

Tony Kirkby

I have also found Hiveclean to be quite effective in removing varroa from bees, though it cannot affect the majority of varroa within the brood. It is very easy to apply and slightly slows the rate of increase in mite numbers dropped. Any improvement is to be welcomed.

Tony Kirkby, Guildford BKA

I have a little more confidence in mite drops than Roger does. Having bees in my garden, I count every day if I can. The numbers certainly do fluctuate from day to day. I use a seven-day moving average to smooth out the fluctuations. In general, varroa tray counts increase in early spring and can seem dangerously high in some colonies, prompting treatment ranging from icing sugar to shook swarm, depending on the severity, but then decline such that varroa are rare by June.

“ In general, varroa tray counts increase in early spring and can seem dangerously high in some colonies, prompting treatment ranging from icing sugar to shook swarm, depending on the severity, but then decline such that varroa are rare by June. Thereafter numbers increase, the counts appearing to go through cycles with peaks about every fourteen days with each peak higher than the last.

Jim Norfolk

Thereafter numbers of varroa increase, the counts appearing to go through cycles with peaks about every fourteen days with each peak higher than the last. There can be quite a large difference between peaks and troughs, which explains why if you record mite drop on two successive occasions you will find variation. The mite drop numbers are just beginning to increase again this year, so I will see if I observe a similar pattern. I have only once done drone uncapping, but putting concurrent drone counts and tray counts into the Beebase calculator gave similar numbers for the total mites in the colony, which increases my confidence in the method.

Jim Norfolk PhD, Chichester Division, West Sussex BKA

Tony Kirkby and Jim Norfolk monitor on a daily basis and both agree that mite levels can vary from day to day. At the Wisborough

Green teaching apiary we monitor five times a year, which is much more than the average beekeeper does and we are often confused by the results.

“ ... the number of varroa in a colony may be more than it seems from only one count. The point to consider is that varroa counts may be governed by a brood break...

Roger Patterson

I am beginning to hear of a significant and growing number of beekeepers who do not treat with oxalic acid in the winter, based presumably on having a low count. From the experience of Tony, Jim and myself it seems this may need a rethink as the number of varroa in a colony may be more than it seems from only one count.

The point to consider is that varroa counts may be governed by a brood break, so perhaps those who monitor daily as Tony and Jim do will also be able to see if the fluctuations they record are similarly related.

Roger Patterson, Wisborough Green BKA

The Plight of the Honey Bee

It seems that the public at large are very aware of the problems our bees face. The following is a poem sent to us by a concerned non-beekeeper, which we hope will put a smile on your faces.

Honey bees.

*The honey bee is under threat
And little has been done just yet.
They're affected by a deadly mite,
The cure for which is not in sight.*

*They're losing habitat and forage,
With less wild flowers and bright blue borage.
This puts at risk, the flow of honey
And industry is losing money.*

*Then pollination of our crops
Is badly hit and sadly drops.
A beehive needs a good supply
Of food, or it will run quite dry.*

*With this real threat to their survival,
Research is on for their revival.
They hope to raise hygienic bees,
That keep the hives free of disease.*

*They'll try to decode 'waggle dances',
Which, apparently enhances,
Where bees forage for their nectar —
Buzzing off to the right sector!*

*They're looking for a lot more hives,
To study bees and save their lives.
'A beacon of hope', for all to see;
Will you help to save our honey bee?*

Don Filliston.



The Case for the Honey Bee

The vast majority of adults will have left school without being able to distinguish a bee from a wasp or a blow fly unless they have discovered this from their parents. Much further up the scale, however, intelligent students and even their tutors cannot be forgiven when they lump all flying insects that can pollinate into the same category. Much importance has recently been bestowed on the honey bee which endures, carrying on with the same vital work it has been doing for millions of years, but although welcome, research funds are usually spread so that the humblest fly may benefit as much as the undervalued honey bee.

Why is our treasured little *Apis* so special? Firstly, it can be domesticated, meaning we can position colonies where they are needed (like in early flowering orchards when even the earliest bumbles and wasps are only just making a drowsy start). Those lovely, colourful bumblebees are a welcome sight even when they are enticed from their winter quarters by freakish weather. Several hundred of them would be so welcome for peaches, plums and other early flowering top fruit, but we beekeepers would smile at the thought that a single honey bee colony could vastly outnumber them.

Logistics is one aspect, but what characterises the honey bee? The earliest bumbles bustle around, with their melodious hum reminding us all that spring is truly underway. They can work at lower temperatures than honey bees and are really vigorous when delving among the blossoms. Wait a moment though, is the pollen in the right condition if it is too cold for the honey bee to fly? Also, does the bumble share that characteristic of the honey bee in that it is faithful to a particular type of plant? Observation will show you that a honey bee does not fly haphazardly from a dandelion to apple blossom whereas it will go from a Bramley to a Cox.

'This man is biased', some might say, he has become 'honey-struck' and can only see goodness in his quaint and rather strange hobby. Just think how many grains of pollen those bumble queens can carry in their baskets, which must be as large as the honey bees' corbiculae. In truth the honey bee is smothered with specially branched hairs ideal for trapping pollen grains making it a virtual pollen brush to deliver viable grains to every anther against which it rubs. Their bodies can transport far more pollen than their bumble cousins.

Once again, however, we must look at another important aspect; our pollen gatherers sweep the grains into a special press and thence to the tiny central spine in the hollow of the corbicula. Slowly the lump increases in size as more and more grains are added until pellets become almost as large as their eyes. But that pollen is useless to plants now! That is because the bees will have treated it; subsequent further processing by house bees before it is packed into chosen cells will result in pollen that is preserved and unable to germinate unlike those grains clinging to the bees' hairs when set upon a receptive floral stigma. Just as occurs when nectar is converted into honey, pollen is preserved too. Bees have succeeded in storing food which can go on providing them with warmth and energy all through the winter and they can rear brood before nature provides them with little more than water.

There are many interesting aspects of what makes the honey bee unit a colony as opposed to a large group of similar creatures. Their queen lives on for several years producing generations of

shorter lived progeny working continuously in a dark chamber. At her beginning she almost 'leaps' from her cell, starting off with alacrity and setting up a reciprocity whereby her progeny all acquire what we have come to call the 'hive mind', 'colony odour', in fact: 'colony identity'.

The fact that identical eggs can be treated so as to form the three castes, that she can store the male sperm and keep it usable year after year, that she mates on high where eager drones await her (guarding her perhaps from marauding birds). All these things make honey bee colonies particularly special because they have established a harmony so that plants, fruits and seeds resulting from their efforts go on to benefit the whole of nature. Yet we do exploit them so. They have not needed us through all those perils they have had to face to protect the stores, their queen, the brood. The point has surely been made that the honey bee is a wonderful pollinator, but one has to add to this that beeswax is a unique substance which gave mankind a considerable leg-up as seals, fuel, candles, water-proofing, as wood and leather restorer. And as if honey were not such a wonderful gift, we also extol the virtues of royal jelly, pollen and propolis. The bee is not just 'one of the pollinating insects' it is one of God's little messengers. Fences of simple wire, strung with a honey bee nest or two is enough to keep even elephants at bay. And did not bee numbers put fright into humans until a good deal of intelligence was applied to master them. Give credit where credit is due.

Ken Stevens, NDB

What if your bees / hives could talk?

"Conversations with bees"
our project seeks to apply the power of citizen science and open design to the art of beekeeping, enabling people to make their own equipment.

Who we are?

Brunel University PhD research project, including The Honey Club social innovation and also involves BBKA members.

How can you help?

We want to enable beekeepers to gather and apply data collected from their own hives to enhance their practice, engage with hive technology and enable the beekeeping community in new and exciting ways.

How can you get involved?

We are looking for beekeepers, experienced and novices to complete a graphic book (10 minutes duration).

The book would be posted to you with an SAE, costing you nothing but meaning everything to us!

This research informs us, so we can design products for you that will be open source for all to access. You need no technical background we are **interested in ideas.**

Any details will of course be subject to the normal requirements of data protection and ethical approval.

To take part please contact:
info@rdphillips.co.uk



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On the Bookshelf:

The BBKA Guide to Beekeeping

The BBKA Guide to Beekeeping
Ivor Davis and Roger Cullum-Kenyon
Published by Bloomsbury
ISBN: 978-1-4081-5458-8
2012; 192 pp; Price £16.99

The BBKA has a long and creditable record of supporting beekeeping education in the UK e.g., the wealth of information on the outstanding BBKA website, the Advice and Guidance leaflets, the Correspondence Course and the examination system, the Course in a Case resource material — all this in addition to the many informative articles in *BBKA News*. The BBKA has now endorsed the production of a superb addition to the canon of educational material available in the form of *The BBKA Guide to Beekeeping* by Ivor Davis and Roger Cullum-Kenyon; both the BBKA and the authors are to be congratulated on an outstanding achievement.

This book has many virtues and it is hard to find any faults — despite the best efforts of this reviewer! It is a clear, direct and very well presented book. It is designed to complement the Course in a Case resource material and to assist the enquirer, the novice and the beginner. In all respects it succeeds admirably in fulfilling its aims and objectives. The word that first comes to mind when reading this book is 'comprehensive'. This book contains all the information that you would need to get started in beekeeping and the authors have managed to convey a vast amount of information, complete with many beekeeping tips and techniques, in a concise and helpful way. The style of writing within this book is a model of clarity and it is the kind of book that draws the readers in, giving them a desire to read and learn more.

One of the great strengths of this book is that it fully recognises the range and diversity of beekeeping methods and equipment that are in current use in the UK. The book resolutely refuses to press home a particular viewpoint and opinion and in this respect it stands in marked contrast with many other books on beekeeping that are currently in print in the UK. It is a pleasure to read a book that is so open and frank about what is, and what is not, known about beekeeping in the UK.

The design and layout of this book is particularly good and the information is clearly and helpfully divided into ten chapters that manage to cover the whole range of topics that its target

readership would need to know about in order to start beekeeping. Beginning with some basic bee anatomy, the reader is then introduced to the members of a colony and their various jobs. This chapter and that setting out the normal activities that a beekeeper will need to undertake throughout the year will be of particular use to beginners. Similarly, the chapter on the swarming process and swarm management will be well-thumbed by many. The book has a thoroughly 'modern' feel, with a mass of helpful photographs and illustrations. It is pleasing to note that the photographs do add value to the book and are not just used for visual effect. The only minor blemish with the printing of the book is that during the course of reproduction some of the photographs have darkened somewhat, but this does not detract from the overall appearance of the book.



The chapter on bee and colony health is particularly helpful and apposite. More than ever, today's beekeepers need to have a thorough and effective knowledge of what can go wrong in the beehive and what they should do about it. One minor niggle the reviewer has about the information on the control of the varroa mite is that the book places little emphasis on the use of open mesh floors as part of an

integrated pest management system.

This is an outstanding book and the reviewer will make full use of it when involved in enquirers/beginners classes. It stands alongside David Wootton's book *A Novices Guide* as one of the two best books currently in print about beekeeping for the beginner. Wootton's book has matchless photographs — but this book is more comprehensive and it comes from a deep understanding of the honey bee and man's involvement with the insect. During this year's beginners lectures that the reviewer will be involved in he will be commending both books!

With the publishing of this book it is at least arguable that there is now an ample sufficiency of introductory/beginners books on beekeeping. I wonder, does the BBKA now intend to follow the publication of this book with a further endorsement for one designed for the more seasoned and experienced beekeeper?

Dr Stephen Palmer,
FRGS FLS

On the Bookshelf: Queen Breeding and Genetics — How to get Better Bees

Queen Breeding and Genetics — How to get better bees

Eigil Holm

ISBN: 978-1-904846-62-8

Published by Northern Bee Books

Softback; 93pp; Price £18

The author, Eigil Holm, is Danish and the book was originally published in Danish and German. It contains much of interest for the serious queen breeder and includes valuable details of the genetics of bees, which is lacking in many books. This should not put off those who are less interested in these details as the topics of producing queens and mating nucs are also dealt with in detail.

The illustrations in the queen production section are copious and excellent, making this subject easy to understand for those who find it difficult. Grafting is described and illustrated as is queen marking and the use of mini nucs. There then follows a description of what the author calls an alternative method for large scale queen production, which I found less easy to follow than the main section on queen rearing.

There is an interesting account of the mating stations used in Denmark, where numerous islands are used to isolate specific strains of bees. Drone foundation is placed between worker foundation and the author explains how drones will only produce sufficient sperm if they have easy access to pollen and honey, so the drone producing colonies are given the most favourable conditions. Testing of drones for sperm quality is also illustrated and described. The sometimes difficult task of introducing a queen is discussed and the author says that queens should not be introduced when the honey flow is low unless the colony is fed. He points out that a queen raised in a mating station is precious and thus has to be handled with great care.

There is a section on races and evolution, which includes morphometry. The Buckfast bee is discussed as this is popular in Denmark and they are produced in closed populations. This is of little relevance to many UK bee breeders, but is of interest.

The chapter on instrumental insemination is well illustrated with some excellent photographs, although it is relatively brief. The aims of breeding are discussed in some detail and include the marking system used by the Danish Beekeepers' Association. Interestingly this includes a section on resistance to nosema.

The real strength of this book, however, lies in the detailed

sections on bee cytology and genetics. These topics are rarely covered in most books and while some may think they are not essential, for those who want to understand the fundamentals of queen rearing, bee breeding and improving their bees, a proper understanding of the genetics of these complex insects is

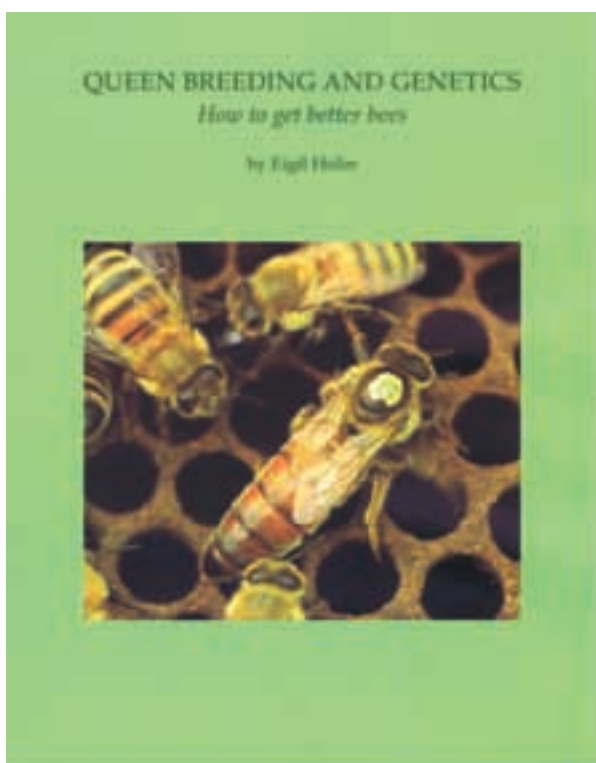
important. Mitosis, genes, chromosomes, mitochondria and DNA are all described clearly with good illustrations. The chapter on meiosis, mating and segregation is probably the best I have seen. This is followed by a description of Mendel's second law, including linkage and crossing over. I am not clear, however, why the author chose to illustrate this principle by using the bees' response to American Foul Brood; although this is minor niggle on my part in an otherwise excellent description.

Inbreeding is dealt with in a chapter on sex alleles and this is something that all beekeepers should understand. The author also discusses 'nature versus nurture' and makes the

extremely valid point that many bee breeders are so busy concentrating on the genetics ('nature') that they forget to check the environment ('nurture'). He points out that improving the environment is often the fastest way to improve beekeeping and that even the best genotypes are useless in a bad environment.

This book, overall, is extremely useful for a range of beekeepers whether they are relatively large scale queen rearers or the hobbyist just wanting to improve their bees. In addition anyone intending to take the BBKA modules 5 and 7 will find this the most comprehensive account of topics that are sometimes over-looked in many other books.

Pam Hunter, Central Sussex BKA



Business Corner

Vita Honey Bee and Beekeeping Photo Competition

Anyone with an interest in honey bees and beekeeping is invited to enter a photographic competition run by Vita (Europe) Ltd.

There will be cash prizes and beekeeping products for the winners, and the best pictures will feature in the Vita 2013 calendar.

The entries will also be added to the hundreds of honey bee-related photos in the free, online Vita photo Gallery. Visit the gallery at: www.vita-europe.com/gallery.

Entrants can submit up to four photos (up to 1Mb each) relating to honey bees or beekeeping by emailing them to gallery@vita-europe.com. Photos can be on any relevant topic from: honey bee behaviour; beekeeping practices; foraging honey bees and honey bees' produce.

The deadline for entries is 1 November 2012.



Photo by Ross Kimber, who entered the first Vita gallery photo competition.

National Honey Show Reminder

- I hope that by now you will all have received your copy of the 2012 Schedule. If not, then please get in touch with either Clive Mence at clive.mence@btinternet.com or tel: 020 8942 7505, or me at showsec@zbee.com.
- In the schedule you will find all the details about the Show, including the Lecture and Workshop programme.
- Exhibits may be sent to the College by courier/post addressed to: The National Honey Show, c/o Facilities, St George's College, Addlestone, Weybridge KT15 2QS.
- Northern Bee Books and E H Thorne have also kindly agreed to transport exhibits to the Show, but you must arrange this with them beforehand.
- We have some new classes this year and there will be even more trade stands. In other words it is a Show not to be missed.
- I shall be glad to hear from any aspiring Judges, who wish to be a Judges' Steward at this year's Show. You must get in touch with me at showsec@zbee.com before 10 September 2012.

Francis Capener,
Honorary General Secretary

Correspondence Course Co-ordinator

The new new Correspondence Course Co-ordinator is Bob Gilbert who lives in Staffordshire. Bob has been a biology teacher, is a member of the BBKA Examinations Board; is a Master Beekeeper, having won the Wax Chandlers Award; a BBKA examiner and he has been a Correspondence Course Tutor for eight years.

The Correspondence Courses take you through the BBKA Examination Board syllabuses for the Basic Assessment, the seven Modules and the Microscopy Certificate (theory) modules. You are guided by friendly and helpful tutors who have nearly all qualified as Master Beekeepers. You work at your own pace and should expect to take several months to properly prepare yourself.

You will be attached to a tutor who will comment on your work and provide help and encouragement where necessary. The tutors receive no fee and are happy to put back into the craft the help they received from their own tutors when they were studying. Please bear in mind that all the tutors are very active beekeepers and they may therefore be busy during the summer months.

For an application form see the BBKA website or contact Bob on 01827 65749 email BBKAccourse@aol.com

The Gallery: New on the BBKA Website

I am pleased to announce that we have launched a new feature on the BBKA website called 'The Gallery'. I am not going to repeat the text from the webpage and the associated documentation because I hope that you will have a look at the page and contribute, but it is basically a photo resource area that anyone (members and public) can access and use.

Only BBKA members can upload their bees and beekeeping pictures and make them available, but anyone can (within the terms of the site) download and use any pictures unless they are required for professional purposes in which case other actions have to be taken before they can be used.

I hope that you will be pleased with the latest addition to the website and also that you will upload some of your photos.

David Teasdale,
Web Manager

Wild About Bees

Adopt a Beehive continues to raise much needed funds for research projects the BBKA supports. You can see a list of the projects Adopt a Beehive helps to fund on the BBKA web site under 'Current projects'.

This month, sponsor, Burt's Bees, has launched a campaign called 'Wild for Bees' and has commissioned the award-winning designer, architect, author and media personality, Richard Weston, to design a silk scarf inspired by the honey bee and wild meadows.

The soft silk scarf can be purchased exclusively through www.burtsbees.co.uk for £170. The design is also featuring on limited editions of milk and honey body lotion, with £1 donated to the BBKA for every one of these sold. This has already resulted in



BURT'S BEES

£3,000 being donated to the BBKA.

Anyone who buys an Adopt a Beehive before the end of September will be entered into a prize draw to win one of Richard Weston's beautiful scarves, generously donated by Burt's Bees.

Nicky Smith, Twelve PR

Your Letters



The Mystery Uncovered

I believe the piece of equipment depicted on page 30 of the August edition of *BBKA News* to be a Killion board, first designed by Carl Killion as a way of preventing bees from extending brood combs below the frames, so enabling broodboxes to be placed above another box of frames without a lot of work removing the brace comb.



Each wooden slat corresponds to a frame bottom, and the whole has a bee-space on one side with the slats being flush with the surround on the other, so it can be used on top or bottom bee space hives. I made several of these up for use on my own hives, and 25 years on they are still in use. Donald Sims makes mention of these in his book *Sixty Years with Bees*.

Nigel Salmon, Vale and Downland BKA

Was He Correct?

Full marks to Nigel Salmon and others of you who correctly identified the Killion Board in last month's *BBKA News*. I wonder how many of you knew, as Nigel did, what its intended purpose was?

We asked Ken Basterfield, NDB, who said "the Killion Board was fashionable and in vogue some fifty years ago, certainly I acquired some along with much confusing advice on how to use them. There were great claims for their efficacy over a large number of beekeeping problems, whether for control of swarming, winter losses, acarine which was a great problem then, or nosema. Strangely there were few facts to support these claims." Thank you to Ken and also to Nigel for sharing their knowledge and experiences using this interesting piece of equipment with us.

Diary of Events

2012

8-9 September. Bristol Honey Festival. Download a schedule and entry form at <http://www.bristolhoneyshow.org.uk>

8-9 September. Birmingham & District Beekeepers' Association Annual Honey Show and Competition. John Gale, show manager: gailrail@lineone.net or 01214711267.

22 September. Preparing for the BBKA Microscopy Exam: an all-day refresher course, visit www.microbees.co.uk.

30 September. Dorset BKA Autumn Convention. Speakers: Keith Delaplane, Pam Hunter and Bob Smith. Details from Carole Brown 01308 456210 or caroleabrown@tiscali.co.uk

6 October. BBKA Annual Forum at NBC, Stoneleigh. Topics for the agenda to be sent to the NBC.

13 October. Beekeepers and Microscopes afternoon taster session, further information www.microbees.co.uk.

13 October. Hampshire BBKA Open Honey Show, Sir Harold Hillier Gardens, Ampfield Romsey as part of National Family Education Week. Info from www.hampshirebeekeepers.org.uk or contact pippabarker@aol.com or 01730 895368

25 October. Central Association of Beekeepers' Social Evening: 'Bringing Science to Beekeepers', National Honey Show. Contact Pat Allen: 01708 220897; pat.allen@btconnect.com; www.cabk.org.uk

25-27 October. National Honey Show, see p33.

10 November. Essex BKA conference 'Beekeeping in the 21st Century', £20, full details <http://www.harlowbees.co.uk/conference/>

23-25 November. Central Association of Beekeepers' Stratford Conference: Speakers and dinner. Contact Pat Allen tel: 01708 220897, Email: pat.allen@btconnect.com, web: www.cabk.org.uk

2013

12-14 April. BBKA Spring Convention, Harper Adams University College, Newport, Shropshire.

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Your Letters



Re-using Honey Jars

There has been much whispering on the grapevine and beating of jungle drums on this subject of reusing honey jars, but so far it has all been speculation and so I decided to go to the source and contacted the Food Standards Agency. Below is their reply and I believe all members of BBKA should be made aware of the position. Recycling is definitely not high on the agenda of the Food Standards Agency and there are still myriad people selling Auntie Harriet's plum chutney in re-used mint sauce jars with frilly tops and an adhesive label bearing a brief motto in biro, but as beekeepers we know better, don't we?

Stewart Gould, Somerset BKA

The Response

The legislation with regard to food contact materials will preclude the reuse of glass honey jars for any commercial food use, even following stringent cleaning. A commercial honey producer is legally obliged to ensure their jars are fully compliant with legislation, and have an overriding requirement under the Food Safety Act to ensure the food they provide is safe.

Any packaging used must be compliant with the European regulations (principally Article 3 of Regulation 1935/2004,) which sets out the safety criteria for food packaging. Though it can be assumed that originally the jars met these criteria, as they were fit to sell at the retail level, once sold and their constituent food has been consumed, the required chain of documentation which shows they are compliant is broken. Thus it would be impossible to demonstrate to the relevant authorities that the reused jars were compliant, unless the jars were knowingly manufactured to be reused, and within a closed loop distribution system like milk bottles. However, only the courts can decide whether in particular circumstances an offence has been committed.

The Agency has guidance on the re-use of food contact materials, which is to be found at: <http://www.food.gov.uk/safereating/chemsafe/packagingbranch/packagingreuse>

Vincent Greenwood, Scientific Officer
Food Contact Materials,
Veterinary Medicine Residues & Mycotoxins
Agricultural Contaminants and
Food Contact Materials Branch
Chemical Safety Division

Medicine Records

BBKA News has reminded beekeepers of the Veterinary Medicines Directorate's requirement for beekeepers to maintain records of the purchase and use of medicinal products. The article detailed what is to be recorded and how long records should be kept. However, one requirement is to record disposal of unused medicine, but no advice on safe disposal given.

I have tried contacting the VMD about safe disposal but they have not replied, so some advice would be welcomed on safely disposing of used and unused medicinal products.

Ted Scott, New Forest BKA

The Response

The recently distributed Bee Medicines Record Card (reproduced below) has a box labelled 'Date, quantity and route of disposal'. Readers have asked for more information particularly on the 'route' element. Reference to the SPC (summary of product characteristics) for currently licensed bee medicines, which can be viewed on the VMD website, is helpful but could be more so, being rather general, advising disposal in line with 'local' or 'national' authorities' requirements. A typical example is:

Special precautions for the disposal of unused veterinary medicinal product or waste materials derived from the use of such products, if appropriate.

Any unused veterinary medicinal product or waste materials derived from such veterinary medicinal products should be disposed of in accordance with local requirements. Extremely dangerous to fish and aquatic life. Do not contaminate ponds, waterways or ditches with strips or empty packaging.

What is absolutely clear, is that unused or expired bee medicines must not under any circumstances be flushed down toilets or enter the drains. Likewise, they should not be put into household waste. Local authority waste sites may be able to help and you should contact your local authority to establish what to do. Another possible route for disposal is via your local pharmacy which will be used to dealing with unused human medicine. Local vets may also be willing and able to help. The VMD is aware that the guidelines could be more helpful and we will pursue this with them.

Tim Lovett

Bee Medicines Record Card			
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Colony Identity	Date Administered	Quantity Used	Withdrawal Period



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