



Newsletter of The Blackburn and East Lancashire Branch of
The Lancashire & North West Beekeepers Association

March 2013

www.blackburnbeekeepers.com Registered Charity

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MEMBERS SERVICES

Bayvoral - Apiguard - Oxalic Acid -
Thymol - Fumidi'B'

These Chemicals for treating bees can be obtained from:
David Bush Phone 01200 - 428152
Dave will have them available at beekeeper's meetings.

LIBRARY

There is an extensive range of books on all
aspects of beekeeping that can be borrowed from the
Association library.

Please contact

Brian Jackson on 01535 634503

MEMBERSHIP

REGISTERED MEMBER. Subscription for the 2013 season will be £30.00

PARTNER MEMBER. This is for partners of registered members living in the same household wishing to keep bees and includes full insurance cover. However they will not receive their own copy of BBKA news. Subscription will be £20.00

COUNTRY MEMBER. This is for people who do not keep bees, but wish to receive BBKA news and attend branch meetings etc. This class of member does not include any insurance cover. Subscription will be £12.00

IMPORTANT INSURANCE NOTICE

Under the new constitution, prompt payment is essential. Basically, payment will be required by the 31st December each year as insurance is now based on the current years membership. New and lapsed members insurance cover will not start until six weeks after paying their subscription.
For insurance purposes subs will need to be promptly, otherwise you will not have third party insurance
SUBS SHOULD BE PAID TO PHILIP AINSWORTH HON. TREASURER Phone 07713161480
Address ::::: Phil Ainsworth Riverside Cottage Potters :Lane Samlesbury Preston PR5 0UE

Association Swarm Catchers.
For the 2013 season

A small charge is made to collect swarms to cover expenses which is up to the discretion of the individual collector.

BLACKBURN, DARWEN, ACCRINGTON, MELLOR, PRESTON and
ROSSENDALE
AREAS

Karen Ramsbottom.
Telephone 01254722514
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CLITHEROE AND SURROUNDING AREAS

[John Zamorski](mailto:John.Zamorski@wanadoo.co.uk)
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BURNLEY, NELSON AND SURROUNDING AREAS

Alistair McLean 07815049283 AlistairMcLean@ymail.com

Victoria Winstanley. 01282-701692 vicicoaffee@yahoo.co.uk

Ellen Howarth. helen@waltonhowarth.co.uk

Please feel free to ring any of the above in your area and they will do their best to sort out the problem.

Swarm collectors will not come out to Bumble Bees and Wasps
problems

FUTURE BRANCH MEETINGS

April Meeting **Sunday April 21st 2013 @ 2pm**
Towneley Hall Burnley BB113RQ **Click For Map**

Preparing Nucs for Queen Rearing with John Zamorski

May Meeting **Sunday May 19th 2013 @ 2pm**
Towneley Hall Burnley BB113RQ **Click For Map**
Swarm Control/ Grafting Queen Larvae (Practical)

June Meeting **Sunday June 23rd 2013 @ 2pm**
Salmesbury War Memorial Hall. Cuerdale Lane
Samlesbury, Preston PR5 0XD **Click for Map**

Branch Open day

We will, where possible open hives so bring along your protective clothing just in case.

DISCLAIMER

The views expressed in any of the articles in 'Bee Talk' represent the personal opinions of the Contributors and in no way should they be regarded as the official opinions or views of the 'Lancashire & North West Beekeepers Association' nor of our local Branch of this association 'The Blackburn & East Lancashire Branch'

For Sale **Protective Clothing**

1. Cotton Bee Protective Boiler Suits all sizes a bargain at £20 each
2. Net Veils that need to be fitted onto a hat at £3 each
3. Box of thin but very strong gloves at £3 for a box of 50 pairs

These are available by ringing Bob Fulton on 01254-772780

3. Available from Early March 2012 Fitted Veil at £15.
- All in all if you buy the protective Suit, Veil and Gloves you will have yourself fully protected at a cost of £35 compared to something like £85 to £100 from other suppliers.

Sugar and Candy

20 kilo Buckets at £12

10 Kilo Buckets at £6

1 Kilo Bags at 60p

Candy Sticks at 30p per stick

These are available by ringing David Bush on

01200-428152

UK Honey Labelling Regulations

Below is our simple advice on honey labelling. For more detailed information - go to the website of the Food Standards Agency. www.food.gov.uk

- 1. The Word **HONEY**'s required.*
- 2. The weight must be on the label - we will ensure it is the legal size and format.*
- 3. You can specify the area where the honey is produced. For example, Lincolnshire, Forest of Dean, Scottish Borders.*
- 4. You can specify the type of honey. For example, Heather, Borage. The honey must be at least 75% of that particular type.*
- 5. If you are selling the honey, you must have your name and address on the label. It does not need to be complete but you should be able to be found from the information.*
- 6. If you are selling the honey through a third party, you must have a lot number.*
- 7. New for 2003 You must have a best before date on the jar. We suggest 2-5 years from now.*
- 8. New for 2003 You must have a country of origin on the jar. For example - Produce of England, Product of Scotland, Harvested in Wales. Adding the country to the end of your address is not acceptable.*

E H Thorne (Beehives) Ltd disclaims all responsibility for all consequences of any person acting on, or refraining from acting in reliance on, information contained above.

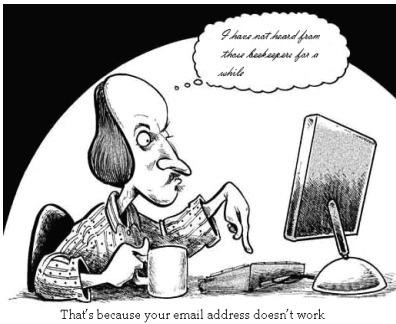
From EH Thorne's online catalogue 2010 - other sources are available



What's in the Honey Pot

A few snippets of news and information that may be of use to you

Editorial



Our membership secretary reports that several members' email addresses no longer work and emails are bounced straight back at him by the "mailer-daemon". If you've been feeling neglected by your Association lately, please check that we have your correct email address. You can rectify this problem, if it applies to you, by emailing

Well glad last year is over. What a bad time for UK beekeepers. Reports coming in of low honey crops, with some members having no honey at all. Bees having to be fed throughout the year. Anyway that was last year, lets hope that this one proves to be a good one.

We have had a couple of meetings already this year and they were well attended, although at the January meeting the weather was really bad and it was a struggle for some members to get to the meeting.

We now, as you will all know have a new education secretary in place and she is already on the ball. She as set up a **Basic Assessment Course** and is in the process of setting up a **Module 1 (Honeybee Management) course**. Which will be started later in the year. All the details of both courses are on the web site at www.blackburnbeekeepers.com

Bob Fulton is also running a course for beginners, only for people who have never kept bees before. Bob can be contacted on **01254-772780**

The courses at Samlesbury Hall are still be sorted out and as soon as any details are available, they will be put on the website.

The figures that have come back with regards to the importation of queens from other countries makes horrible There was a total 7957 queens imported into the UK in 2013. These came from Austria, Cyprus, Czech Republic, Denmark, Germany, Greece, Italy, Poland, Romania and Slovenia. The largest number 3130 came from Greece, whilst Slovenia exported 1567 and Denmark 1066. 250 nucs were imported - 185 from Spain, 65 from Czech Republic and 20 packages from Poland. From Third countries (Third countries are countries other than Europe who are allowed to export queens to the UK), 590 queens were imported, 490 from New Zealand and 100 from Argentina and these are the figures that are known, I guess there was lots more brought in under illegally too. This all make the job of trying to get the British Black Bee back and even more uphill struggle.

Reports are already coming in of members losing their colonies over the winter, some due to starvation, some due to Nosema. The former I guess it's the beekeepers fault with not preparing for the winter. The latter a different tale altogether and one that needs to have a meeting about or an article in this magazine or on the website.

Michael

Meet some of the Committee for 2013



John Zamorski (Chairman)



Brian Jackson (Vice Chairman)



Vici Winstanley (Hon Secretary)



**Phil Ainsworth
(Hon Treasurer)**



**Caroline Coughlin
(Honey Show Secretary)**



**Janet Murray
Education Officer**



Bob Fulton. Committee Member



David Bush. Committee Member



Alistair McLean. Committee Member



Helen Howarth Committee Member



**Michael Birt.
(Webmaster and Beetalk Editor)**

January Meeting at Salmsbury Hall



The venue for this meeting had to be changed at short notice because of a double booking so we all ended up in the Chapel at Samlesbury Hall. What a lovely spot it was. We had 32 members attending which I thought was quite good considering the weather and we were supplied with copious amounts of coffee. Because we are very close to our club bees, we are looking into the possibility of having more meetings there. Car parking is free and the room will hold 80 people. Sharon, the Hall manager, has also told us that as a member of Blackburn branch, we will be allowed to join Friends of Samlesbury Hall at no charge and this will entitle us to free entry to the hall. Hopefully some of you will use this facility and treat yourself to a lunch while you are there to help support her. Makes for a cheap lunch if you don't have to pay to get in.

Anyway, the subject for the day was Apiary Hygiene and disease and John went through the various things that needed to be done to ensure that cleanliness in the apiary was needed to help prevent and control disease.

Different methods of cleaning and sterilising equipment were discussed and the importance of keeping all your protective clothing etc. clean were explained. Using the shook swarm method to change over dirty or diseased brood frames, and sterilising equipment using different types of blow torch were demonstrated.

After discussing the risks involved while using the different methods of applying oxalic acid,

Steve and Tony did a practical demonstration of the sublimation method in the club apiary watched by around 15 of the members. This involves the use of an evaporator which when connected to a battery, turns the solid form of oxalic into a gas and effects the mites. This was very helpful because people were able to see at first hand how this treatment was done and could then decide which method was the most suitable for them. It was explained that if this

method was going to be used, it was important to only use the correct evaporator and not some home made items as these could carry risks. Thanks to Steve and Tony for their assistance.

Janet Murray, our new education officer, talked about the proposed training courses which will be starting around the first week after Easter and we had 11 people ask to join. If we get many more we will have to consider holding two courses.

February Meeting

Towneley Hall 24th Feb 2013

Around thirty members attended the meeting and the subject was “Spring management” taken by John Zamorski.

The importance of preparing the colony properly in the previous autumn and how this affected the colony build up in spring was explained. Checking that there was plenty of food and the hives are watertight helped prevent the biggest spring killer of starvation and damp. Bees can cope with the cold but not damp. There were reports of losses already this year. John took some dead bees home for examination and found heavy cases of Nosema in them. Losing the authority for the use of Fumidil meant that many people will not have done anything to treat suspect colonies last year so there will probably be quite a few losses this spring.

Any colonies which do not appear to be building up should be checked to see if they are infected. Spring “dwindle” is a classic sign of Nosema infection but may also be for other reasons. If you are unsure, ask for help. Ring anyone on the committee for advice.

Making sure you start the year off with clean boxes ,floors etc. will help in the prevention of disease and also with control of the varroa mite. Various methods of creating a brood break at this time were also discussed.

Helen Howarth gave details of the Microscopy Course which was held this year and reported that feedback had been very positive. When members were asked if anyone else was interested in another course there were at least half a dozen more who wanted to learn so it looks like another course is needed. Please contact Helen if you wish to get your name on the list.

Janet Murray, our new Education Officer, reported that there have been twenty applicants for the basic assessment course. This is really too many to take as one group so there will be two courses running, one immediately after the first one finishes. Start date for the first is Wednesday 10th April and the second will start on 22nd May, also a Wednesday. Janet and John will take these lessons and during the summer there will be a number of practical sessions for both groups, taken by David Rayner at Towneley Hall and John Zamorski at Samlesbury Hall Apiary.

If anyone else would like to join these groups, please contact Janet as soon as possible to get your name down. It has been fantastic to see the interest in learning more about beekeeping. Janet has more courses planned and she will be putting details of this on the website. There is no need for you to take the exams if you do not want to, just learning is the important thing.

After the annual dinner on 22nd March, the next meeting will be at Towneley Hall again where we will be learning about preparing nuclei for queen rearing. Hopefully if the weather is kind we can look at some bees so bring your gear.

This Saturday in the Telegraph (12 January 2013) I saw an article on natural bee-keeping by Heidi Hermann a natural beekeeper, and it might give us traditional beekeepers some food for thought at the same time stimulate some debate, also this approach the article says, might reduce colony collapse, she finishes the article with 9 points and an advert for a book by David Heaf "The Bee Friendly Beekeeper".

The points are:-

Keep bees for the bees' sake and value them as pollinators first (apicentric), and honey producers second.
Fill your garden with nectar and pollen-rich plants (particularly in February/March and June, and avoid use of chemicals.
Allow bees to overwinter on their own honey instead of feeding a sugar substitute. Harvest excess honey only in spring when there is sufficient nectar flow.

Maintain the nest scent and warmth of the hive by opening it only if really needed.

Allow the bees to reproduce naturally by swarming (this also helps break the varroa cycle).

Don't use chemical treatments for disease and pest control (including varroa mite).

Don't cull the drones (sometimes used for varroa control).

Choose hives that replicate natural sites used by bees, eg hollow trees and cavities.

Avoid smoking the bees as this can cause undue stress.

Also there is a web site www.naturalbeekeepingtrust.org should you want further information.

With Thanks to Tony Houghton



You don't see this often

What is honey?

What is honey? We know that honey comes from a honey bee hive. But exactly what is involved in making that delicious sweetener from the hive?

Honey is largely nectar gathered from flowers and carried into the hive. However, there is much more that goes into making honey. It takes ten pounds of nectar to make one pound of honey. The moisture must be evaporated from nectar so that it can become honey. It isn't called honey until the bees reduce the moisture content to around 18% and add some enzymes to it. The process starts with a drop of nectar gathered from a flower.

Around the age of 23 days old, a honey bee is old enough to begin flying out of the hive to gather nectar, pollen, water and propolis. Prior to day 23 she has been restricted by age to in house hive duties. First, she takes orientation flights around the hive so she can remember how to find her way back from a long flight out. We refer to bees that fly and gather resources as foragers. Now that she knows her hive location, she works her way to the dance floor where an experienced forager is passing out samples of nectar that she has just gathered from a flower. And she is doing the waggle dance, a figure eight dance that directs other foragers to the location of the nectar source. The waggle dance reveals the distance to the flower, a sample of the nectar and the direction of flight. Once our new forager has her flight path laid in, away she goes with one mission, to find the location, fill her honey stomach with nectar and when full, return to the hive. While she is gathering nectar, the flower awards her with pollen which she will store on her back legs for the flight home. Both pollen and nectar are the colony's main food source. She will fly back to her hive fully loaded with 80% of her body weight in pollen and honey. That's the equivalent of a 200 pound man carrying 160 pounds, for miles!

Once our forager arrives back at her hive, she must unload her surplus. She is met by a house bee on transport duty. The forager will deflate her honey stomach just enough to dispense a droplet at a time through her tongue, giving the house bee a droplet of nectar. The house bee begins to work the droplet in her mouth pieces for about 20 minutes which helps in the drying process. She also will add enzymes to the nectar which helps break down the complex sugars into simple sugars as well as protecting it from bacteria. The house bee is aware of the needs of the colony and so it relays this message to the forager. For instance, if the nectar is low in carbohydrates and the colony requires water, or a different concentration, then it will be indicated by the speed at which the foraging bee is unloaded. A high carbohydrate nectar will be unloaded much more quickly. If the droplet is not required for immediate feeding, the transport house bee will carry the droplet of nectar up to the honey comb that is currently being filled by other transport bees. The droplet is then placed in an opened cell. Other house bees fan their wings at 11,400 times per minute to help evaporate the moisture from the nectar. Once the nectar reaches a moisture content of around 18%, more house bees will seal over the comb with wax. The reason honey is sealed with wax is the same reason we can our food. It will preserve the honey, keeping additional moisture from being absorbed into the honey.



Honey Gathering Bullet Facts:

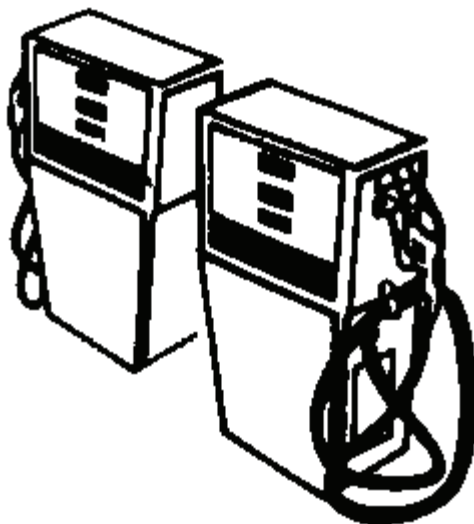
- Drones (male bees) and queens do not gather nectar. Only the mature, female worker bees forage for resources.
 - All raw honey will eventually crystallize.
- Crystallized honey is very good to eat, but it can be re-liquefied when heated to 104 (f) degrees. Heating over 104 (f) degrees can damage the taste and reduce healthy enzymes.
 - Honey will crystallize fastest between 55 (f) – 63 (f) degrees.

Honey is not likely to crystallize if it is kept below 40 (f) or above 104 (f) as this is the temperature in which the crystals melt.

Steve Ganner



Our Secretary Vici's Beehives well and truly snowed in



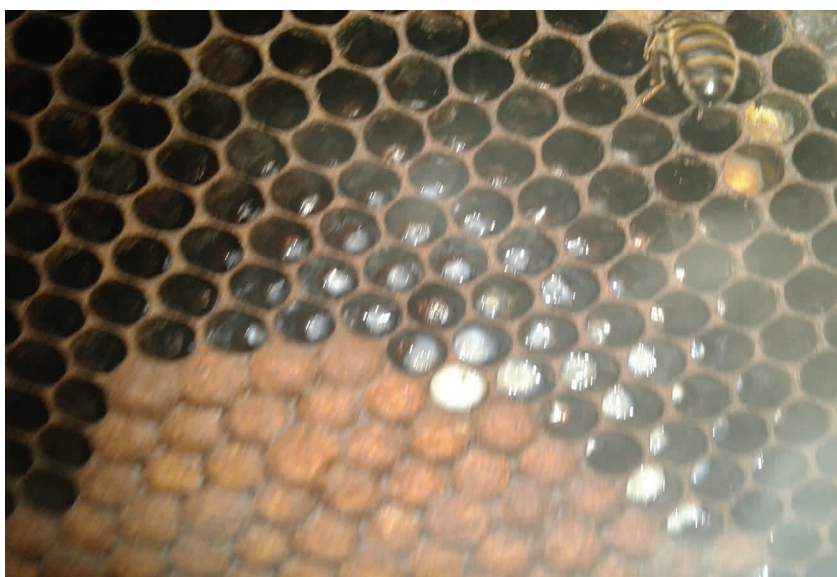
Petrol for half price (or less).

Is the cost of getting to meetings and apiary visits getting you down?

Why not share the driving with other bee keepers in your area?

This could reduce your bee related fuel costs by 50% or more. If you don't know who is nearby, get in touch with the secretary, Vici Winstanley , who can let you have phone numbers of any bee keeping neighbours you may have.

As a side benefit, it will make parking easier, too.



Date Thursday 3rd January 1100 hrs (bees flying)

Once again I've done the dreaded deed of opening a hive at 13 degrees temperature. My monthly check for newly laid eggs and presence of brood, AND once again I have eggs and larvae in the hives. The cold spells have just not been cold enough to prevent egg laying. I will not be treating yet.

Steve Ganner

From Steve Ganner

“It’s been an unusual year as far as the weather is concerned, largely wet and warm up until December.

In the stronger colonies, this has meant there has been plenty of late brood, resulting in much of the stores being used up through December, a time when there is hardly any nectar coming in.

Last year was a difficult one for most of us and although we kept feeding the sugar syrup (a poor substitute for nectar) pollen stocks are likely to be low. Furthermore, I believe that the extremely damp weather could adversely affect the stored pollen and it may not be fit for its purpose come Spring.

I think this coming Spring, we will all see evidence of spoilt pollen outside the entrance so I will be using pollen patties this year. The bees themselves know only too well that the amount of brood they can rear as Winter approaches is dependent on the amount and quality of the pollen they can get stored before the temperatures drop too low. If there is not enough pollen to rear brood, the cluster just gets smaller as the bees die off. The bees may want to rear brood but if the pollen isn’t there, the brood won’t be there either.

Getting back to worrying about only three seams of bees; If the colony is a big one and the weather is warm, there is very little food out there to collect, so it stands to reason that lots of bees overwintering will eat lots of stores. It has already happened, bee-keepers are finding their larger colonies have starved already. However, small colonies under the very same conditions (little food to collect) do not eat much of the stores. This means the small colonies, as silly as it sounds, often have a better chance of pulling through because they won’t starve.

So long as the feeders are put on early, the small colonies will build up and a tip is to keep the feeders on in Spring even if the bees seem to be finding plenty, because they will continue to utilise the syrup after dusk and during the night - remember, the daylight hours in spring are still very short”.

Integrated Pest Management (IPM)

IPM covers the joint use of bio-technical counter-measures (mesh floors, drone and worker brood culling etc.), with chemical countermeasures of both hard and soft types. These are palliative and labour-intensive, but are not seen to provide a long term answer to the mite. The effectiveness of IPM in protecting the colony with manageable levels of side-effect can be improved by continual monitoring of colony infestation levels. The minimum levels of mite population which seriously threaten a colony vary across the year, being largest in summer and smallest in Autumn. Measurement of these levels to detect when they cross the critical thresholds is important as it enables appropriate treatment to be applied when necessary, and only when necessary. The use of simple mite-drop counting to estimate levels of infestation is not fully reliable. The beekeeper would do better to supplement these with counts of mite numbers on samples of bees and in samples of sealed drone and worker cells.

Prospects for Varroa control

Near term: continuing reliance of current forms of chemical-centred IPM, guided by regular monitoring of mite infestation levels.

Medium term (5 years+): a shift towards the biological-centred IPM.

Longer term (10 years+): progress towards breeding of tolerant bees coupled with more advanced forms of bio-technical control aimed at suppressing mite reproduction.

Eradication of the mite is not likely to become a feasible proposition within the foreseeable future. This is because it is firmly established in the feral bee population which is not subject to current and foreseen control strategies, and the feral population will always re-infest the domestic bee population even if this could be 100% purged of the mite.

With Thanks to Mike Saunders

Ludlow and District Beekeepers Association

Viruses In Bees - What do they do and what can we do about it?

By Joachim de Miranda, Uppsala, Sweden.
From: Bee World, March 2012 www.ibra.org.uk

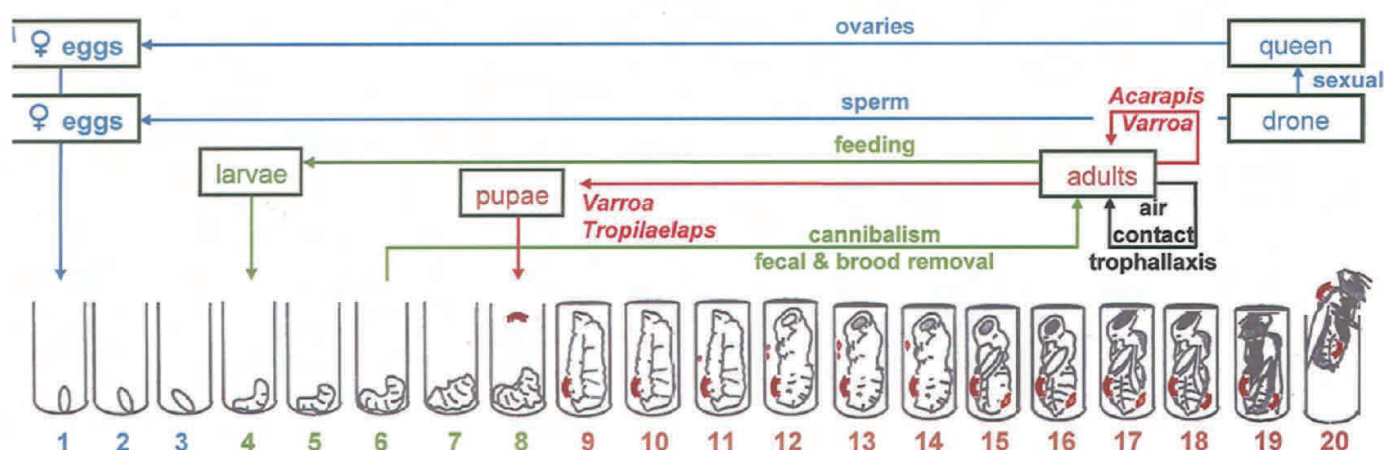


Fig. 1

The diagram outlines the major transmission routes for honey bee viruses in relation to honey bee development stages.

Bees, like all living things, have a wide range of viral diseases. Most have been known since the 1970s and were, at that time, relatively harmless. Epidemics were transient and rarely at the expense of the colonies. This peaceful co-existence has been disturbed during the past 30 years, mainly due to *Varroa*, but also due to changes in farming and beekeeping practices. Here we examine the relationship between bees and their viruses, how it can derail, and how we can reduce this risk.

All kinds of differences

Viruses can only survive through transfer to new hosts (or "hostesses", in this case). This does not necessarily have to cause disease. Illness or death of the host without transfer is, from the virus' perspective, effectively suicide. Disease only benefits a virus if it enhances the chance of transmission (such as sneezing with colds).

Figure 1 describes the various transmission routes available for bee viruses. These can be broadly divided into:

- oral faecal (through food and faeces, green)
- sexual (blue)
- contact (black)
- through a parasite vector (red).

[We do not have the space to include the Table which showed, for each virus, the confirmed transmission routes, associations with other parasites, developmental stages infected or diseased, seasonal incidences.]

Faecal, oral and contact transmission is relatively inefficient: high virus concentrations are required to cause infection. Transmission via mites by contrast is very efficient and generates very high virus titres in the affected bees. Such bees then become also much more infectious through the other transmission routes. This mutual reinforcement of different transmission routes increases the likelihood of an epidemic. Since adult bees are central to most transmission routes, due to their many interactions and mobility, their health is essential to reduce the impact of such epidemic transmission loops.

How colonies collapse through virus infection

Typical of an epidemic virus infection is the progressive shrinking ('dwindling') of a colony, due to excessive larval or adult mortality that cannot be replaced fast enough. However, a shrinking colony itself does not automatically point to an infectious (viral) disease. It can occur naturally after a long break in brood rearing (i.e. winter) when the old adult population dies faster than it is replaced. Any actor affecting the health of these old bees during this time can tip a colony into collapse. Virus infections may accelerate this process (they are opportunistic pathogens, after all), but not necessarily as the primary cause. This time window depends also on the size and health of the winter cluster (produced during the previous autumn) and the early spring foraging opportunities. Since spring foraging consists mostly of shrubs, trees and weeds, it is therefore partly influenced by the homogenisation of the farming landscape and practice.

Virus disease management

So, what can be done to minimize the potential for epidemic virus transmission? The main source of infection is the bees themselves. Through the worldwide trade in bees and bee products, most bee pathogens now have a world wide distribution. However, the prevalence of disease can vary sharply between countries, due to different beekeeping or farming practices, as well as geographic and climatic differences. There are two components to (virus) disease management:

- minimising the risk of transmission
- reducing the virus load in colonies.

These categories overlap to some degree, since the risk of transmission increases with higher virus loads.

Reduce the risk of transmission

This focuses largely on separating infected material from non infected material. This applies mostly to the bees themselves (queens, sperm, packages, colonies, apiaries) and to lesser degree to equipment (hives, frames, hive tools, extraction equipment, etc.). The key tools here are good organization and quarantine.

Apiary management

The most practical unit for transmission risk management is the apiary, usually consisting of 5-20 colonies. Placing apiaries several kilometres apart (*i.e.* out of most of the practical flight range), provides a natural quarantine that should be supported by minimizing the exchange of bees and material between apiaries. Partitioning the local foraging between multiple smaller apiaries is, from a disease management perspective, preferable to fewer larger apiaries.

Know your enemies

Routine inspections and thorough knowledge of disease symptoms are essential for identifying problems early on. Colonies that develop slower than expected in spring or fail to accumulate honey in summer are suspect, as are frames with 'spotty' brood, which can arise from bees removing diseased brood. Symptoms can be confirmed by sending a sample to a diagnostic laboratory or with the field ready ID kits that are currently being developed. Diseased colonies should be quarantined and protected with entrance reducers to prevent robbing by healthy colonies.

Sexual transmission

Sexual vertical transmission, from drones to virgin queens and to her progeny, is a popular transmission route with viruses, because it allows the virus to spread over long distances and between colonies, efficiently infecting entire colonies through the queen. This risk can be limited by checking the semen or drone colonies, or the initial progeny of newly mated queens, for diseases [*if you have the means*].

Healthy beekeepers associations

Perhaps a slightly unexpected, but key factor to transmission risk management is a well supported local beekeeper association. After all, the health of your colonies depends partly on that of your neighbours' colonies. Active associations promote education and cooperation, benefiting the health of everyone's bees.

Reduce the disease load

This focuses on general colony health and disrupting the key within colony transmission routes.

Preventive management

Since viruses are opportunists that flourish during times of stress, the first remedy is to keep your bees happy, healthy and stress free. This boils down to the usual Good Beekeeping advice such as abundant season-long foraging, minimal disturbance, protection from the elements, a productive queen, adequate ventilation and room for growth. Like other types of preventive care, such as exercising, flossing your teeth and changing the car oil, it is the sort of 'common sense' advice we all known in theory but do not always implement equally well. However, as with most 'common sense' advice, it also gives the greatest long term health benefit, for the least cost. Take care of the bees and the bees will take care of you. Since honey bees thrive in a diverse (floral) environment, the intensification of farming landscapes and practices has put greater pressure on apiary selection or periodic relocation to ensure adequate forage and protection throughout the year. One major current research topic is therefore how this landscape can be modified to benefit both farming and bees.

Disrupting transmission

The other major tool for reducing virus loads in colonies is disrupting transmission within the colony. For this it is important to know the preferred transmission routes of the different viruses. For example, chronic bee paralysis virus is primarily transmitted through close contact. It is therefore often associated with overcrowding and aggression, for example due to over expansion, inclement weather or insufficient forage. Resolving the causes of overcrowding disrupts the transmission and slows or reverses the epidemic. Sacbrood virus is a larval disease of Spring and rapid colony expansion, when there is much brood for the adult bees to attend and infected larvae may escape detection and removal. It usually clears up by itself when the adult population catches up, but it can look disconcertingly like American foulbrood (AFB), so it is useful to have a few AFB test kits around to make sure. Black queen cell virus (BQCV) is associated with *Nosema apis*, a disease of adult bees that normally peaks in late spring. It can be a problem in commercial queen rearing operations where breeder colonies are kept broodless for extended periods. The nurse bees tend to be older in such colonies, and therefore more likely to be infected with *Nosema*, and thus also BQCV, which is transmitted to the queen larvae through the royal jelly. Control of both *Nosema* and the age of the nurse bees should avoid most problems. Bee virus Y is also closely associated with *Nosema* and Bee virus X with *Malphigamoeba* disease, all of which are spread by dysentery. Preventing the accumulation of faeces inside the hive should alleviate these diseases. Bee Virus X and Bee Virus Y share many features with the recently described Lake Sinai Virus 1 and 2 and could therefore be the same viruses.

Critical treatment timing

Deformed wing virus (including genetic variants Kakugo virus and Varroa destructor virus 1), acute bee paralysis virus (including the closely related Kashmir bee virus and Israeli acute paralysis virus) and slow bee paralysis virus are actively transmitted by *Varroa* and most likely also by *Tropilaelaps* mites. Controlling the mite population is the key to managing these virus diseases. The most damaging mite mediated virus transmission is to developing pupae when the mite is reproducing. Such pupae produce damaged, non functional and short lived bees that accelerate dwindling and winter collapse.

Autumn Varroa treatment should therefore be at least 6 weeks (one bee generation) before brood rearing has finished: 1 week to remove the mites on adult bees, 2 weeks to clear the mites from the brood and 3 weeks to purge, from the adult population, those bees derived from mite infested pupae with high virus titres and reduced survival.

And the frames?

Although traces of viruses can be found in hive boxes and combs, especially in stored pollen, it is unclear how contagious this material, given the inefficient oral transmission of most viruses. Frames covered in faeces or diseased brood represent a much more serious risk and should be replaced. Regular comb replacement also helps avoid the accumulation of bacterial pathogens and pesticides.

Antiviral medicines

Conventional wisdom states that there is no cure for virus diseases but that is no longer true. The developments in molecular biology have yielded an ever growing range of antiviral products, particularly in the medical and veterinary fields, where the cost of treatment can be justified. Honey bee virology has belatedly caught up and there are now clinical trials of antiviral drugs for honey bee (virus) diseases, based on RNAi technology with very encouraging initial results. How cost effective such treatments will be depends on disease severity, application rates and how the virus evolves in response to the treatment.

Probiotics

Another recent development is the discovery that the bees' natural bacterial micro flora is actively involved in suppressing bacterial disease. This micro flora is shared between bees as part of their social immunity. Although it is not yet known whether this micro flora also specifically protects against viruses, it is clearly a generic health benefit for individual bees and colonies. Researchers in Sweden are trying to improve this probiotic health benefit and minimize the damage done to it by the antibiotic treatments used in beekeeping.

Genetics

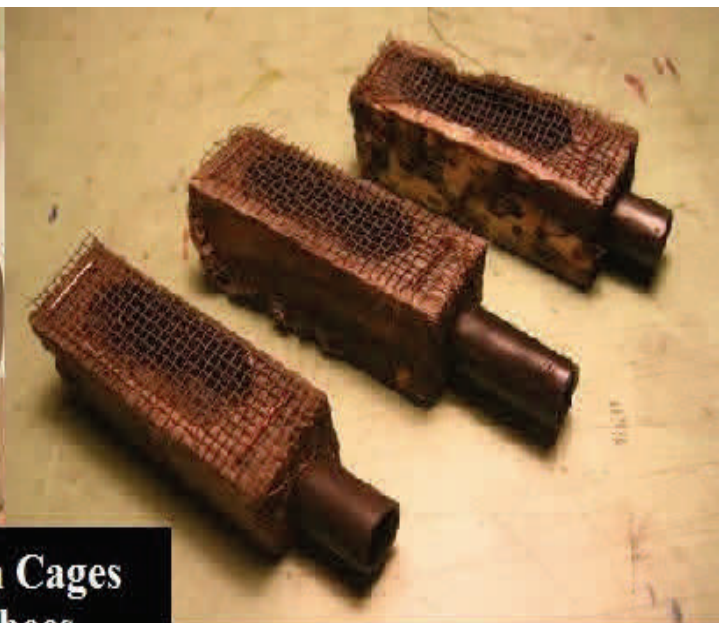
Honey bee breeding is becoming increasingly sophisticated, using highly developed pedigree analyses and molecular mapping techniques to identify the genes influencing important traits such as hygienic behaviour, foulbrood resistance and *Varroa* reproduction. This is currently also being done for resistance to virus infection. Furthermore, genetic diversity within a colony is in, and of itself, highly beneficial to colony health. This is achieved naturally through the multiple mating by the queen. The genetic aspect of bee health management therefore consists of reconciling the different genetic benefits of selective breeding and mating diversity.



Gerrit Norsselamn in pipe-fitted bee veil at the annual bee market in Veenendaal, Holland (1956) from LIFE Magazine Aug 20, 1956 (Volume 41, Number 8, pages 41-42). The article states "Bees, which are sold for around \$3 a hive, are bought for pollination and honey-making". The bee market in Veenendaal began over 100 years ago. Yes, Gerrit used his pipe smoke to "calm the bees".



Beekeeping Museum in Radovljica
<http://www.carniolan.info>



Antique Queen Cages for honey bees

<http://theaffectedprovincial.blogspot.com/2011/03/what-are-they.html>

There is a great review of various queen cage types with many images and diagrams here:

<http://www.dave-cushman.net/bee/queencages.html>

Beekeeping Tips

With thanks to Essex Beekeepers

Once the bees have started to forage early in the year, the pollen on the legs of the returning bees will tell you it's time to look at the pattern of the brood nest and to make sure that all is well. Firstly, the smoker should be lit and going well with little likelihood of it going out in the middle of an inspection. Whether it is likely to go out depends to some extent on what fuel you use in the smoker. I find that collecting old fallen dead wood, when out walking through woodland areas, provides an adequate supply of fuel once it is dried. Always carry a plastic bag in your pocket before such walks. Put a small handful of grass on top of the wood fuel (or in the lid) to prevent sparks being blown on to the bees. Sparks that fall on to the ground can be especially dangerous in dry weather. So long as one hive is flying well then all hives in that apiary should be examined. For inspections of the brood chamber it is wise not to smoke at the entrance as this drives the bee upwards in the hive whereas you want them below the top of the top bars of the frames. So just crack open the crownboard, at one corner, and puff in a little smoke before gently twisting the crownboard horizontally a few seconds later. Twisting it avoids making vibrations and noise that are likely to give the bees more warning that you are coming! None should fly up as you stand the crownboard vertically against the hive stand, bees and all. Before you stand up the crown board inspect it to make sure the queen is not on it. If she is there then you can offer her up to the entrance by sloping the crown board, upwards, to the entrance so that she can walk into the hive or alternatively hold the board so that she is on that part of the board nearest to the top bars of the frames, and a few centimetres above them. With your other hand just thump the board edge next to the hand you're using to hold the board. The queen and bees around her will fall on to the top bars. Her ladyship will quickly go down into the dark. Stand behind the hive or to one side depending on whether you have your frames the warm way (parallel to the entrance block) or the cold way. You are thus able to lift out each frame vertically. Start slowly with the second frame from the edge of the brood chamber nearest to you, as this one is easier than the first frame, which latter is usually attached to the hive wall by more propolis or wax. Examine carefully to ensure the queen is not on that frame before you stand it vertically near the hive entrance. If there is brood on that frame it must be examined. You now have a space within which you can lift out the next frame without rolling the bees on each other as you lift. In other words move this frame 10 mm or so towards you before lifting ... a process repeated for each subsequent frame until you reach your last frame against the hive far wall. Tilt the bottom of the frame away from you and face into the sun or best light so that you can clearly see into any cell by looking down and beyond the top bar. Be careful not to deceive yourself by reflections on the cell wall that you have an egg or young larvae in the cell, when in fact there is nothing in the cell. Eggs are roughly 2 mm long and at the bottom of the cell. Any on the sidewall of the cell spells trouble. Next turn the frame so that you can inspect the side of the frame that was previously nearest to you. It is important to do the two sides of the frame in that order as the first side you inspected has just emerged into daylight and since queens like the dark it gives you the opportunity to spot her quickly on that side before she makes a move to the other side via the bottom bar, which is now the darker side. When turning the frame do keep the foundation in the vertical plane as you turn it over. If you are not familiar with this move ask someone to show you. This prevents any sagging of the foundation, which is quite warm and soft. Remember that you do not need to find the queen if eggs are there. Remember that the brood nest is in reality a small sphere about the shape of a football. In the early part of the season five or so frames will divide it. Each roughly circular patch of brood will have eggs around the periphery followed by increasingly larger larvae as hatched eggs are found as you eye moves towards the centre of the patch. In the centre you will observe patches of sealed larvae. As you work across the frames of the brood nest the circles of brood will increase in size with a similar smooth pattern, and then decrease as you reach the far frames of the brood nest. The main difference being that some of the sealed larvae nearest to the centre will have hatched. You will possibly see bees about to emerge after 21 days from the time the egg was laid. At this stage if there is nothing untoward that has been observed you need to go no further. Close up the frames and replace the first frame, which has been standing near the hive entrance throughout your examination. Replace the crownboard by placing it initially so that its corners are halfway between the corners of the brood chamber and then rotating it alternately back and forth, in small amounts, until it arrives in its correct position. This minimises the chance of squashing bees. A bit of smoke at this time helps to keep the bees down before you finally twist the crownboard back into position. Squashing bees is unnecessary and results in spreading disease if it's there, as well as releasing sting pheromone. Care and steady handling results in quiet bees for the whole season. It has been my observation that beginners tend not to use enough smoke in order to keep the bees below the top bars when doing inspections. As you gain experience you will learn how to use the minimum of smoke to control your bees and to smoke just before you lift out the frame. Finally, if anything seems not to be correct, for example dead larvae or larvae lying in unnatural positions, then do call in your mentor or one of the ministry disease officers.

Swarm in Winkley Square, Preston Town Centre when the area had to be cordoned off. Tempted off with the waxed frame and eventually went into the box



Kindly sent in by Steve Ganner

Genetic weapon against bee killer

Researchers have developed a genetic technique, which could revitalise the fight against the honeybee's worst enemy - the Varroa mite. The method enables researchers to "switch off" genes in the Varroa mite, a parasite that targets the honeybee. The scientists say this could eventually be used to force the mites to "self-destruct". The treatment is now at an early, experimental stage but could be developed into an anti-Varroa medicine.

Varroa destructor is widely accepted to be the major pest affecting the European honeybee, and has been linked to a worldwide decline in these important pollinating insects. Dr Giles Budge from the National Bee Unit in York, who was involved in the study, said the mites operated a particularly "severe form of parasitism". The human equivalent, he illustrated, would be having "an organism on your back that's about the size of a dinner plate, which creates a hole through which it can feed and through which its family can feed". "The hole doesn't seal up - they drink blood through it and inject viruses into it."



To tackle this particularly nasty pest, bee researchers and parasite specialists came together to harness a method called RNA interference (RNAi). This involves putting a tiny chunk of genetic code into an organism. This code cancels out a specific gene, essentially switching it off. The researchers added this piece of genetic material to a solution that they soaked the Varroa mites in. They described in the journal *Parasites and Vectors* that, via this soaking, their experimental treatment found its way into the mites and switched off the gene they were targeting.

Dr Alan Bowman from the University of Aberdeen led the research. He told BBC News that the approach "fooled the immune system of the mite" into attacking itself.

Dr Budge explained that this proved it was possible to "control gene expression in the mite. In the experiment, we've targeted a non-lethal gene, because we were able to monitor if we have successfully silenced it. Now, we'll be looking to target genes which, when we silence them, the mite won't be able to function."

In the coming years, the researchers hope to develop this into a medicine, which could be added to the bees' food in order to protect them against Varroa. "The mites hide in the food that is being provided by the other bees in the colony for honeybee larvae," Dr Budge explained. "They will hide for several days in that food, so [a beekeeper could] put the treatment into the brood food and the mite, through its normal behaviour, would come into contact with that treatment." This could solve a conundrum for beekeepers - how to tackle the mites without damaging the bees they live so intimately with.

Currently, beekeepers use chemicals, or mitocides, in carefully controlled doses to control the parasite. They even use trapping methods - physically removing mites from hives. Dr Bowman said: "This [new method] can target the mite in the hive. It would be completely selective - it wouldn't target the bees and wouldn't affect any other pollinating insects, such as ladybirds."

Professor Francis Ratnieks, a bee researcher from the University of Sussex cautioned that it would be a long time before this technique could be applied in the control of Varroa. "It may be possible to use gene knockout techniques such as RNAi to learn more about the physiology of pests and to use this to develop ways of controlling them, maybe by the development and application of novel pesticides," he said. "But to do this is a huge undertaking involving [many years] of testing and certification."

By Victoria Gill, Science and nature reporter,

BBC News

To bee or not to bee

by William Shakespeare

*To bee, or not to bee: that is the question:
Whether 'tis nobler in the hive to hurl
the stings and buzzes of enrag'd workers,
or to take smoke against a sea of troubles,
and by sedation end them? To die: to sleep;
No more; and by a sleep to hope we end
the thousand pests and pesticides
that bees are prone to, 'tis a consummation
devoutly to be wish'd. To hibernate;
to sleep: perchance to dream: ay, there's the rub:
for in that sleep of death what dreams may come
of halcyon hives beyond a flowering sea,
must give us pause: there's the respect
of bees for keepers calm and kind:
For who would bear the whips and scorns of wild,
the raiding bears, the scratching mites,
the colony collapse disorder, spring's delay,
the insolence of kids with stones
and dogs that stink a stinkhorn out,
When happy bees their treaty make
With but a gift of honey homely made.
To wax and weary dance a busy life,
bearing the dread of winters famine,
the undiscover'd country from whose chill
no colony returns, puzzles the will
and makes us rather bear those ills we have
than fly to others that we know not of?
Thus fearfulness makes cowards us all;
And thus the natural drive to forage
is sicklied o'er with the pale cast of thought,
And, enterprise of great collusion,
with this regard our swarming turned awry,
and lost the name of action. - Soft you now!
The fair Melliferal Nymph, in thy prayers
be all our stings forgiven.*

This little known piece was written by Shakespeare in the late 1570s when he was in his teens and shows an amazing maturity of style. It has been largely forgotten since his adaptation of it to Hamlet about 20 years later. Shakespeare was much taken with the drama of the hive, queen flight and the personality of drones. He, with his contemporaries, believed that all female bee-keepers were known by their bees as 'Ophelia' but recent bee neuro-science shows that there is regional variation, with 'Loveday' occurring in the south-west and Nuala among Irish bees, so we have adopted a more generic name here.

Nick Tregenza

An Hes, The Newsletter of the West Cornwall BKA

Honey Feeds.

Despite the fact that on first observation it would seem obviously correct, honey is not the best feed for bees. Honey is in essence bee food that has been processed so that it won't spoil. When given the chance, bees prefer to eat nectar. When honey is used as a feed, or within one of the following recipes, be sure to know the source. If at all possible only re-feed honey to the same hive it was harvested from. Never use store-bought honey. Store-bought honey may contain **AFB** or other such spores, which are perfectly safe for human consumption but can be deadly to bees. I recommend that you **DON'T use it at all**

Sugar Syrup

One of the reasons to keep bees is because the honey that they create is harvestable. After a honey harvest it may be necessary to supply bees with an artificial honey replacement, or a source of artificial nectar to prevent starvation. Other times artificial nectar can be used to encourage the drawing of comb or aid in the rearing of brood when real nectar may be scarce or unavailable. It should also be noted that honey contains materials that bees can not digest and sugar syrup makes for a better source of bee feed. This does not mean that it is appropriated to take all of the bees' honey, after all the bees did work rather hard for it. Bees should always have excess honey in storage. When using sugar only use white cane sugar, don't use raw sugar, brown sugar or molasses as they contain impurities that may harm the bees or be difficult for the bees to digest. If using powdered sugar instead of standard crystallized cane sugar be sure to check the ingredients list, as some powdered sugar contains anti-caking agents that might be harmful to bees. Although the following recipes call for ingredients by weight, volume is a close enough approximation, as the bees don't particularly care about the specifics of sugar concentration.

1:1 Syrup

1:1, or One-to-One syrup can be used for supplemental spring feeding and encourage the drawing of comb.

- 1 part (by weight) sugar
1 part (by weight) water

Simply stir sugar into room temperature water until all the sugar has dissolved to produce the desired quantity. The dissolving process will be sped up with hotter water, **just be sure not to boil the sugar solution.**

2:1 Syrup

2:1 or Two-to-One syrup can be used for fall feeding after the last honey harvest, or if the bees do not have a sufficiently large store of honey.

- 2 parts (by weight) sugar
1 part (by weight) water

The two parts sugar will not dissolve in room temperature water. Because of this mixing difficulty it is advisable to mix the sugar into near-boiling water. **Do not allow the sugar mixture to boil**, as this will give the chance for some of the sugars to caramelize, creating a partially indigestible and possibly even toxic solution as far as the bees are concerned. Be sure to let the solution thoroughly cool before feeding it to the bees.

1:2 Syrup

1:2 or One-to-Two syrup can be used to stimulate brood rearing by simulating a nectar flow.

- 1 part (by weight) sugar
2 parts (by weight) water

Simply mix the sugar with room temperature water and feed the bees.

Bee Candy

Occasionally it is not advised to feed bees syrup. Sometimes when emergency feeding it is best to use a dry or semi-moist food, other times bee candy is used as it is less messy than feeding syrup. Even though bee candy may be convenient to use as feed, it is not recommended as a complete substitution to syrup.

Fondant Bee Candy

Fondant bee candy can be fed directly to the bees once cooled. It is also common to use this recipe in small quantities to plug the hole on a Queen Cage.

- 4 parts (by volume) white sugar
4 parts (by volume) 2:1 Syrup 3 parts (by volume) water

Boil water and slowly add the syrup and sugar until dissolved. Continue heating until the mixture reaches 238°F (114°C). Allow the solution to cool (without mixing) until it is slightly warm to the touch, and begin to mix and aerate the solution, the colour should lighten. Pour into shallow dishes or mould and save for later use.

Quick Candy

In a pinch quick candy can be used in place of Fondant Bee Candy, it is easier to prepare, but may not be as easily workable.

- 1 part (by volume) confectioner's sugar
1 part (by volume) 1:2 Syrup or simply knead the two ingredients together like bread dough until completely integrated.

Pollen Substitute

Occasionally there is a shortage of pollen, or perhaps you simply desire to promote the raising of brood. Pollen substitutes can be used in such situations, however despite its name, pollen substitutes are no real substitute for genuine fresh pollen.

Dry Pollen Substitute

Dry pollen substitute can be placed directly into the hive or used in bird feeders to attract local bees.

- 3 parts (by weight) Soy Flour (expeller-processed soybean flour)
 - 1 part (by weight) Brewers Yeast
- 1 part (by weight) Non fat Dry Milk (Not instant milk)

Simply integrate the powders together and use. Occasionally bees may refuse to eat pollen substitute, most often when fresh pollen is available. It is however possible to trick bees to take the substitute when necessary by integrating a small amount of Vitamin C into the mixture. Often 1 teaspoon per 5 cups can be added. If a powdered form is not available, it is possible to crush a Vitamin C tablet for integration.

Pollen Patty

To make a pollen patty, bind the Dry Pollen Substitute with enough 2:1 Syrup to make a putty or dough like consistency.

Grease Patties

Grease Patties containing both wintergreen oil or tea tree oil and mineral salt appear to have an effect on Varroa mites and Tracheal mites. These effects can be seen when brood is present, and has a devastating effect on mites when brood is not present. However, grease patties with essential oils should not be used during time of honey collection for human consumption. During this time, grease patties without essential oils can be used to a lesser effect. For any noticeable effect, a grease patty of some form should be used at all times. Replace any consumed patties.

Simple Grease Patty

- 1 part (by volume) solid vegetable shorting
- 2 parts (by volume) white sugar

Mix sugar and shortening until well combined. Split into approximately quarter cup (~6 centilitres) portions and store excess in the freezer sandwiched between sheets of wax paper.

Grease Patty with Mineral Salt

- 2 lbs solid vegetable shorting (such as Crisco)
 - 3 lbs whites sugar
- 1 lb 1:2 Syrup or High Fructose Corn Syrup or Clean Honey

$\frac{1}{3}$ cup pulverized mineral salt (~ $\frac{1}{5}$ lb Depending on mineral content)

Prepare the same as you would a simple grease patty recipe.

Grease Patty with Mineral Salt and Essential Oils

- 2 lbs solid vegetable shorting (such as Crisco)
 - 3 lbs whites sugar
- 1 lb 1:2 Syrup or High Fructose Corn Syrup or Clean Honey
- $\frac{1}{3}$ cup pulverized mineral salt (~ $\frac{1}{5}$ lb Depending on mineral content)
 - 3 table spoons wintergreen oil

Prepare the same as you would a simple grease patty recipe.

General Purpose Essential Oil Mixture

A commercial, general purpose essential oil product for bees that is similar to the following recipe claims many benefits, but many of those claims have yet to be proven. The following recipe should work about as well as that product, but is cheaper. It can be added in small quantities to feed to encourage feeding, however it has been known to occasionally cause Robbing behaviour due to its great appeal to bees.

- 5 cups water
- 2 1/2 pounds of sugar
- 1/8 teaspoon lecithin granules (used as an emulsifier)
- 15 drops spearmint oil
- 15 drops lemongrass oil

Bring the water to a boil and integrate the sugar until dissolved. Once the sugar is dissolved remove the mixture from the heat and quickly add the lecithin and the essential oils. Stir until everything is evenly distributed. This solution should have a strong scent and not be left open around bees. Cool before using.

Smokeless Smoke

A solution of general purpose essential oil mixture and 1:1 syrup can be mixed and used in a standard spray or misting bottle. This solution reportedly has varied effects depending on the specific history of the hive. Because of differences between each hive it, is best to try a ten to one [1:10?] mixture of essential oil mixture to syrup and vary the ratio as necessary. Have your smoker readily available during your first few trials in case the bees don't react to the solution.

Essential Oil Scent Masking Syrup

Nearly any essential oil can be mixed with a 1:1 syrup solution to mask an undesired scent in the hive. Among other uses, a masking syrup can be used during queen introduction or when joining two hives. Simply add the desired amount of oils to the syrup. The stronger the scent, the better it will serve to mask other scents, though be frugal as essential oils have a strong smell.

One of the more common oils to use is peppermint oil, but be sure not to use banana oil.

Scent Masking Syrup

An inexpensive scent masking syrup can be used similarly as the recipe for essential oil scent masking syrup. Simply prepare a 1:1 syrup and one or two crushed peppermint candies for every two cups of prepared solution.

Load the solution into a spray bottle and use as needed.

There are different variations on all the above methods and some beekeepers may use different recipes, so the above is I suppose like a guide and you may have other ways of doing things

Michael Birt

Anaphylactic shock

Just reading the Sunday paper 17/2/13 I noticed an article about anaphylactic shock and wondered if it was some use to our members, I have just copied it verbatim from the paper so here goes.

Around one million people in the UK are prone to this severe allergic reaction, which can happen within seconds of coming into contact with the allergen – most commonly nuts, a wasp sting or bee sting, shellfish, eggs or latex. The speed with which anaphylactic shock can take over the body is terrifying for onlookers; the person may wheeze and gasp for breath, their face and neck may swell and they may get welts or red rashes on their body. But adults and even children who suffer anaphylaxis are often knowledgeable about what to do (allegedly).

If they're carrying their adrenaline injector, help them administer it to their upper thigh (you can do it through clothing). Keep them sitting up if possible, if they are dizzy and pale, they might need to lie down with legs raised, If they become unconscious, put them in the recovery position (another topic). Consider repeating the dose if they are still unwell after five minutes. Call an ambulance even if the treatment has worked: medics will want to take the child to hospital for a check-up.

With thanks to Tony Houghton

What ARE those Queen cells?



Left: A hatched queen cell.
Centre: A sealed queen cell-or is
Right: A torn down queen cell.

Queen cells in the colony need attention at any time of year, but what you do depends on the type of queen cell. They are produced under three impulses- Swarming, Emergency and Supersedure. You must also know the stage of their development. An unsealed queen cell has an obvious bed of white 'royal jelly'. These are the best ones to keep as you know they are occupied by a larva. A sealed queen cell can sometimes be empty, so there is always a risk in leaving just one. A hatched queen cell is often resealed by the bees, sometimes with a greedy worker inside, eating the remnants of the royal jelly. It will reopen easily if the seal is tested with a pin.

Swarm cells are generally found at any time from April onwards. They are usually built around the edges of the frames and in any pop-holes. There may be a great many of them and they are produced in purpose built queen-cups. They hang down vertically. As soon as you find them take the appropriate swarm control measures. If the queen is a very good one you could use surplus cells to raise extra queens in mating nucs, but remember that they are from a swarmy strain of bee. Swarming is generally over by the end of July, but it is not uncommon for a colony with a very prolific new queen to out grow its accommodation and throw a swarm. New queens are otherwise unlikely to swarm.

Emergency queen cells are produced when a queen is lost for any reason (often beekeeper error, but sometimes inexplicable) These are produced from young larvae anywhere on the face of the comb and may be numerous. They project from the face of the comb before turning downwards. Because the larvae chosen may be older than the optimum age they may not be fed so well on royal jelly and therefore the queens produced may also be inferior. Remove any very small cells and try to leave a large, unsealed one. If they are all sealed the safest thing to do is leave the two best ones and hope no casting occurs.

Supersedure queen cells. Supersedure occurs when the bees feel that their queen is failing and try to replace her. This failure may not be obvious to the beekeeper, but is a case when the bees know best. If you remove the cells, almost always, more will be built. If you persist in removing cells into the autumn, any virgin that does hatch will have no drones to mate with, and the old queen may well die over the winter. Supersedure cells are found on the face of the comb and usually only two or three are produced. They are started in queen cups, so hang down vertically, are very well fed, and the subsequent queens are usually of high quality. Supersedure often happens at the back end of the year, and the first you know about it is finding an unmarked queen in the spring. You may though, see two queens laying on the same comb in the autumn, the only time this occurs. The old queen will eventually disappear. Supersedure can also happen by accident. I had a colony with many swarm cells, that I thought had already swarmed, and split the brood into three nucs, each with a queen cell. However, at the next inspection, in one of the nuc boxes, I found the old queen and next to her, her new daughter both happily laying away. This new queen was raised from a swarm cell, not a supersedure cell. I have also read several accounts of this as being a good way to re-queen an aggressive colony. Take an advanced sealed queen cell from a good tempered colony. Protect it in a queen cell cage or simply wrap the sides of the cell in foil. Place it between two brood combs and keep your fingers crossed. Apparently, more often than not, the new queen will supersede the old one. The old queen would have to be marked for you to be sure supersedure had (or hadn't) taken place. It would be interesting to know how much supersedure goes on. I have already had a letter from Jason Turner asking how many beekeepers have seen two queens on a comb, as he just has, and how often. I remember it happening in the observation nuc box at the Honey Show one year. The public seemed to think it was quite normal, but the beekeepers present were very excited about it.

With Thanks to Harrogate and Ripon Beekeepers and e-bees



The Drone Family Tree Riddle

The drone is a male bee.
 He develops from an unfertilised egg.
 He has a Mother but no Father.
 He has but one Grandfather.
 He cannot have sons but he can have daughters.
 He may have grandsons.
 Can he have granddaughters?

Don't be fooled into thinking that the information to answer the question is included in the riddle. Just enjoy the sensation of your brain writhing in discomfort.

An Hes, The Newsletter of the West Cornwall BKA

Acquiring Bees

Remember when making or acquiring nukes that there is a standard (leaflet available from the BBKA website, http://www.britishbee.org.uk/information_leaflets.php). Also it is the policy of BBKA and WBKA to encourage people to acquire 'local' bees as far as possible to reduce the chances of the introduction of disease and to maximise the chances of the bees being able to survive in our climate. While your on the BBKA website, why not have a look round – there seems to be a wealth of useful information there



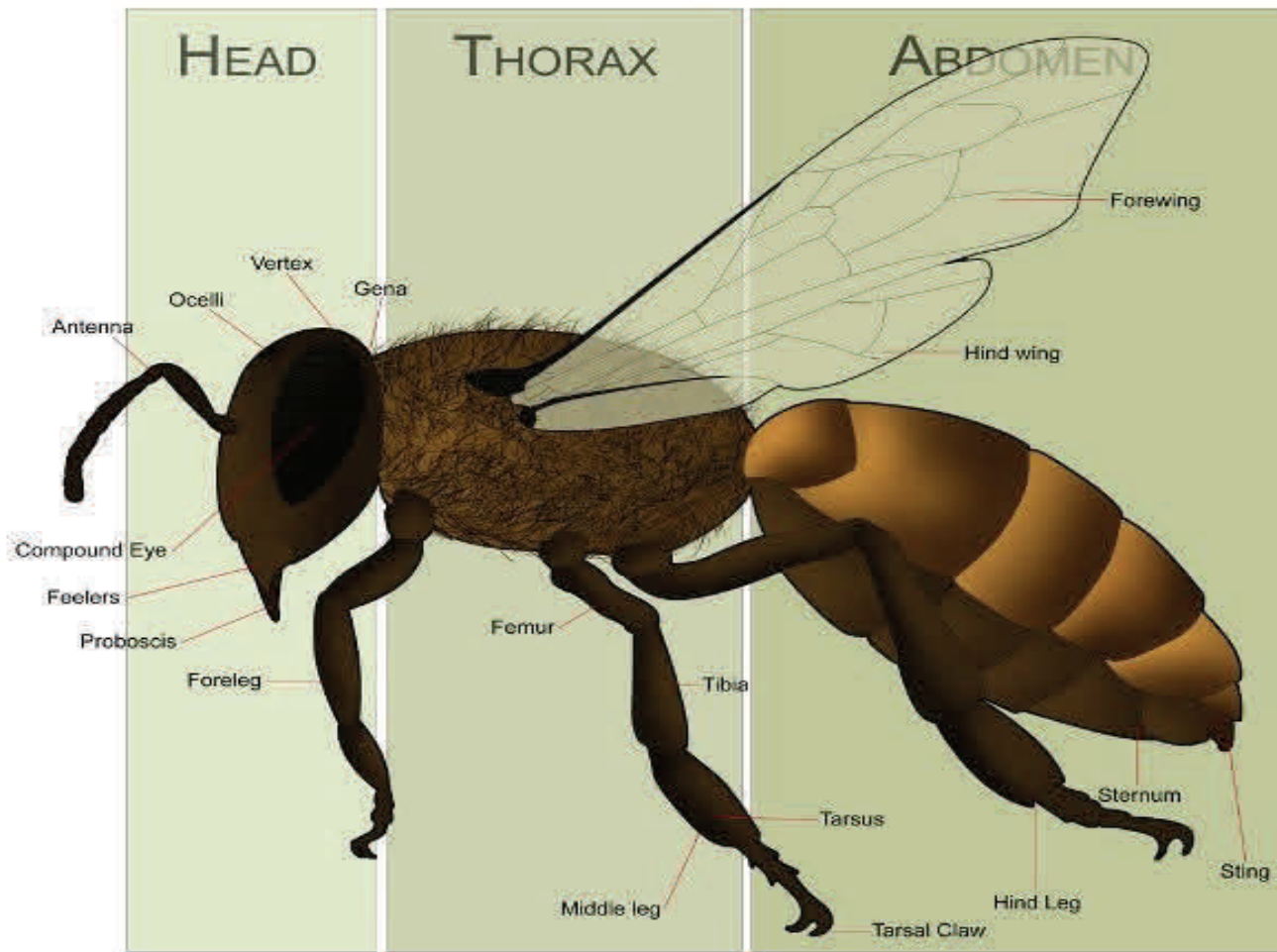
Victorian Wasp Waist Corset
 collage by Ethnobeology

The Victorian "Wasp Waist" corset made women's waists appear smaller (on right). An advertisement utilizes a wasp to display the standard of feminine beauty (on the left). Corsets and girdles to many medical problems for women using them. http://en.wikipedia.org/wiki/Wasp_waist

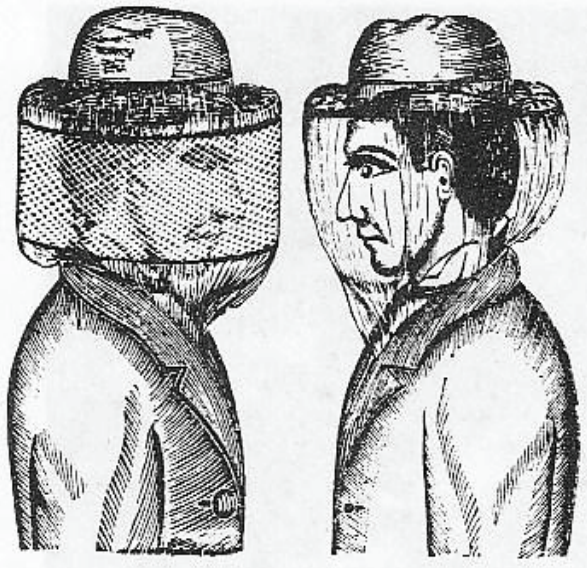
I sourced the image on the right from an informative blog (which follows the wisdom of the Velveteen Rabbit): <http://dimensionsofbeauty.wordpress.com/2011/10/11/in-the-name-of-beauty/>

I sourced the image on the left from: http://www.allposters.com/-sp/Fils-Elastiques-Corset-Posters_i8217009_.htm (which thought it was a bee of course! Nope, its a wasp)

Know your Bee



VEILS a selection from the past.



Early style protection. On the left a screened type similar to today's round veil. Fastened on top to a hat and tucked into a collar.

On the right, a sheer materials was lighter weight and easier to see through.
 Styles for women were made from wire screen and pasteboard.

From 'Bee Culture' 1996

TIPS AND TRICKS

A 'tennis' headband is good for those hot summer days in a bee suit.

Use a LED head torch when loading up in the dark for a trip to the heather.

A two directional 'caravan' spirit-level makes levelling your hives easy.

Petroleum jelly reduces problems of propolis on frame runners or Apidea parts.

A frame hanger is handy to hold the end frame removed from the brood box.

Frame lifting 'scissors' disturb bees less than fingers on lugs.

An old-fashioned magnifying glass makes finding those eggs a bit easier.

A squirt of WD40 on smoker fuel (before lighting!) speeds up the process.

Always use hive straps in parallel not 'crossed'.

Use see-through small bore plastic tube (say from a spray mist bottle) to remove any specs from the bottom of a jar of clear honey entered for showing.

A new (!) small toothbrush dipped in the honey can be used to 'wet' corners of hexagonal jars to prevent bubbles being trapped when the jar is filled.

From the Warwickshire Beekeeper via e Bees

Removing Scum From Honey

Problem: You take the lid off a bucket of honey to find a thin layer of scum (bubbles, tiny bee bits and pollen) across the surface of the honey. You would like to remove the scum before tipping the honey through a fine filter cloth into your honey dispensing tank.

Solution: You could ladle off the scum but that is slow, cumbersome and inefficient. Why not try this: Lay a single sheet of newspaper across the surface of the scum and press lightly to ensure it is in contact with the scum. Then lift the sheet of paper off. Voila! The scum layer is removed clinging to the paper. It works a treat for layers up to around 3mm thick.

PS: Don't be in a rush to remove the layer of scum that settles on top of the honey in your honey dispensing tank after your final fine filtering. That layer helps to retain the aromas that give your honey its attractive individuality

From BKA of Australian Capital Territory via e Bees.

GETTING A SWARM OUT OF A WALL



An article in of Beecraft gave a way of using a modified nuke box to filter swarmed bees out of a wall. It involved fitting two Porter escapes onto the lid to ensure that bees would exit through the box, but could not get back into the wall. The system seemed over complicated so I made a simpler version which worked a treat.

I made a nuke box out of some redundant WBC parts (hence the peculiar shape!) and fitted a Porter escape into one side.

(On reflection, perhaps two Porters would be a wise precaution against blockage?). Round the periphery of that side I glued upholstery foam about 2" thick. Into the box I put a frame of brood and 4 frames of foundation. The box was then pressed tight against the wall, making sure that no bees could escape round the foam. Having come out through the box, the bees soon got used to a new entrance.

With Thanks to TAUNTON & DISTRICT BEEKEEPERS

CLEANING THE SMOKER

You know the problem - smoker gets gunked up with tar, sometimes to the extent that the lid won't close properly. Action is clearly required, but what? Over the past years I have tried a number of chemical cleaners, ranging from beach tar removers to heavy duty oven cleaners - all have been reasonably effective, but at the cost of stinking out the utility room and the cats leaving home for the duration. There must be a better way—and I think I have found it!

The science, for those who are interested, is that wood shavings, which are my main smoker fuel, burn at a "cool" temperature, (better for the bees), but produce a lot of tar. Anyone who has a wood burning stove will have come across the problem of the chimney getting tarred up and the stove smoking. The solution, according to my friendly chimney sweep, is to burn a certain amount of coal each time - this raises the temperature in the flue and burns off the tar deposits (but don't do it as a one-off or you will set the chimney alight...).

No. I am not suggesting coal-fired smokers - but when you are scorching your floorboards with the flame thrower, spare a few minutes to scorch your smoker. The tar will catch light, burn up and turn to a powdery ash which can be knocked away. I have tried it and it works.

From in 'An Hes' the West Cornwall BKA Newsletter Courtesy eBEES

DAVE CUSHMAN

MY LIFE has been hectic and full of excesses, I have lived and loved up to the hilt. I have done more than most people could cram into ten lifetimes. I've hardly made a mark on history, but I have enjoyed myself and I hope I have enriched the life of others. Should I die tomorrow I have no regrets, and if I were to have my time again I would make all the same mistakes..

So wrote Dave who passed away on 23 February 2011, aged 64. Bees were his main passion and he had an encyclopaedic knowledge of their behaviour. In 1979 he started Apex Enterprises in Leicester – a business selling beekeeping equipment and electronics and ran it until 1995. He was a Trustee of Leicestershire and Rutland Beekeepers Association for very many years and was a member of BIBBA.

Dave was not dealt a good hand on the health front, surviving Hodgkin's disease, diabetes, a heart attack, pneumococcal meningitis and a close encounter with a woodworking machine.

In later years Dave committed his beekeeping knowledge to the World Wide Web, developing over 1000 pages of information and bee-keeping friends all over the world. We shall miss his wit, knowledge and wise council.

Editor.

Its hard to believe that its now 2 years since Dave passed away. Is web site is still up and running, thanks to those who appreciated and loved him. Please take a look, its at

<http://www.dave-cushman.net/>

From your friendly Editor

To make it possible for everyone to attend the next meeting we have to organise a special "No Excuse Meeting"? Beds to be placed in the foyer for those who say, "Saturday is my only day to sleep in." A special section with lounge chairs for those who feel that our chairs are too hard? Eye drops to be available for those with tired eyes from watching TV late Saturday night? We could have steel helmets for those who claim, "The roof would fall in if I ever came to a meeting" Blankets furnished for those who find the meeting room too cold and fans for those who say it too hot? Relatives and friends may come to your home for those who can't come to the meeting and cook a meal too. "Stamp Out Subscriptions" badges to be distributed for those who feel that the we is always asking for money?

One section to be devoted to trees and grass for those who like to seek God in nature on Sundays? Doctors and nurses could be attendance for those who plan to be sick on the day of the meeting . We may provide hearing aids for those who can't hear the talk and cotton wool for those who say it is too loud. Substitutes could go to other meetings for you or could do your shopping.

Hope to see you all
Michael

Varroa self-destructor

A few months ago you may have seen the headlines “Breakthrough in treatment for the Varroa mite”, or “Bee Scientists force killer mites to self destruct”. And if you have read your recent copy of the BBKA newsletter April 2011 you will have seen the article entitled “A Beekeepers’ Guide to RNA Interference”. You would be forgiven for not realising that the two

were about the same thing. The discovery of RNA Interference (RNAi) was a breakthrough as a technique for silencing genes in living organisms that could lead to all sorts of treatments or therapies. The scientists who discovered it won the 2006 Nobel Prize. It is called RNA interference as the technique involves interfering with the RNA which is essential for the production of proteins determined by the DNA of the genes. This method for silencing genes, is also known as gene knockdown.

For a more detailed explanation of RNA Interference do read Rachel Baker’s article in the BBKA newsletter. Where it becomes relevant to beekeepers is that if you can shut down a vital gene in Varroa this could lead to the death of the

organism, hence the headline “Varroa forced to self destruct”. Researchers at the National Bee Unit at FERA and from Aberdeen University published a paper in August 2010 detailing their investigation into the use of RNAi on Varroa destructor. Their conclusion was: “Our findings on Varroa are the first report of gene knockdown in any mite species and demonstrate that the small size of such organisms is not a major impediment to applying gene knockdown approaches to the study of such parasitic pests.” The researchers had shown that it is possible to use RNAi on Varroa. Not quite the same as the headline, but everyone likes a good news story and the potential is massive. In this piece of research the scientists targeted a gene in Varroa which has been implicated in resistance to pesticides. Incredibly the technique involved using tiny needles to inject living Varroa mites which were stuck down on their backs on sticky tape. Despite the greatest of care a significant proportion of mites died due to the micro-injection procedure (which has been described as ‘vaccination’) but you really want them to live on for a while to see if the gene expression has been affected by the RNAi technique. The scientists did detect that the gene was totally suppressed 48hrs after injection and this was maintained for 72hrs.

Theoretically if mites were treated with pesticides during this period they would die as their resistance was comprised.

As injecting each mite is extremely laborious the researchers tried out other methods of administering the treatment such as immersing the mites in the treatment solution. They concluded that this method “provides an easy, inexpensive,

relatively high throughput method of gene silencing suitable for studies in Varroa.” With further work into their genetic make up to find genes essential to the survival of Varroa and with improved methods of administering the treatment, you could see how mites really could be made to self destruct. This is really promising research as the treatment would be

totally specific to the mites and not harm the bees or anything else. Dr Giles Budge from the National Bee Unit was quoted as saying “with the right support from the industry, chemical free medicines could be available in five to ten years” (Defra newsletter, April 2011). Even if it takes longer than this, it would be very welcome. Maybe we will be able to call the treated mites Varroa self-destructor.

For the full published article: Gene-knockdown in the honey bee mite Varroa destructor by a non-invasive approach:

studies on a glutathione S-transferase.

Ewan M Campbell , Giles E Budge and Alan S Bowman. Parasites & Vectors
2010, 3:73doi:10.1186/1756-3305-3-73.

Online at

<http://www.parasitesandvectors.com/content/3/1/73>

There are some sound reasons to be aware of and be respectful to your apiary neighbours. The first is disease; we all have a responsibility to avoid the spread of diseases. It cuts both ways, you don't want theirs and they don't want yours.

Make sure your bees are healthy. Know about the location of neighbouring apiaries and try to be aware of the health of their bees. Treat swarms with great care; isolate them for a time until you are sure they are fit and well. The second reason is forage availability; with a doubling in our membership in two years there is an increased possibility of overcrowding of hives in an area. Again this cuts both ways, overcrowding disadvantages all parties. The only realistic way to find out about neighbours is through contact in your division and with neighbouring divisions.

Please use the network of contacts that exists in our association when you are setting up a new apiary and be particularly mindful of disease if you take swarms collected by another beekeeper.

With thanks to Essex beekeepers

Dancing inherited from Daddy

In the dance world, not all bees are equal. In a colony of bees at any one moment, each element has a special task, be it laying of eggs (the queen) collecting propolis, or scouting for nectar and performing dances (the round dance for nearby forage, the figure of 8 dance if it is more than 100 metres away), to increase her comrades enthusiasm for a good source or diminish it when the supply is running low. However some foragers master this type of communication perfectly, while others are noticeably less gifted.

Wolfgang Kirchner and his team, at the university of Bochum in the Ruhr have discovered in their research into bee behaviour that specialisation even extends to the dances. The workers must perform several types of dance, but those that are more gifted for one type of dance are less so for another. The most surprising thing is that this 'gift' is hereditary! All the workers in a hive have the same mother but they may have different fathers. At any given time there will be sisters and half sisters. Kirchner's team examined the dancers' genes after noting the frequency with which each bee practised one or other of the dances.

The result was astonishing! The 17 groups of 'true' sisters were noted and sorted according to their preference for each type of dance. The results showed that the predilection for using the figure of 8 dance over the round dance or vice-versa was significantly related to the sibling grouping.

For Kirchner's team, that proves the importance of genes inherited from the father. According to which father she has, a forager will be more or less specialised in one or other of the dances, more or less assiduous in the performance of two communication codes that are related but different. If it were not the genetic inheritance, you would have to suppose that true sisters can recognise each other and regroup inside the colony to practise a kind of nepotism in certain activities! Impossible! says Kirchner. How on earth would they manage it?

Article from Huntingdonshire BKA, via eBEES

HIVE HEALTH CHECK LIST

Inspecting the brood combs of a honeybee colony is the only way to determine the health and general condition of the colony. However, you have to know what you are looking at and what it means in order to make a diagnosis. In general, a healthy brood comb simply 'looks healthy'. The brood cappings have a 'digestive biscuit' colour; the larvae are white, glistening and 'fat'. The cappings of the brood cells are uniform and the overall pattern is solid, with few holes. A good queen will start laying eggs in the lower centre of the combs and radiate out from there. Once the oldest brood emerges, the queen lays in those cells, and the youngest brood on the comb will now be in the centre. Once the brood-rearing cycle gets underway in the spring or following the introduction of a new queen, all stages of brood should be found at each inspection.

A handy checklist

The following check list was recently found which would be helpful when inspecting your colonies. Here are some conditions you may observe during your brood inspections and their possible causes:

No eggs, no brood present

- (a) Not brood-rearing season.
- (b) No queen.
- (c) New queen not yet laying.
- (d) Extended shortage of pollen.

No eggs, but brood present

- (a) Brood-rearing ceased - end of the season.
- (b) Queen has died or colony is preparing to swarm
- (c) Lack of pollen curtailed brood-rearing.

Test for Presence of a Queen

If there are no eggs and you can't determine if there is a queen present, put in a brood comb with young larvae from another colony. Check back in three days; if the suspect hive starts queen cells, it has no queen.

Eggs present, but no brood

Brood-rearing has just resumed after being halted for some reason.

Wet-looking pollen - in the centre of the broodnest

If there is no queen and during the off-season, pollen may be stored in the centre of the brood nest and can take on an unkempt look - wet or glazed over. When the workers anticipate needing the pollen to feed brood, they move the pollen and freshen it up and it has a dry look.

Clean, empty cells - in the centre of the broodnest

The opposite of the wet-pollen look. When the workers anticipate that brood cells will be needed for eggs, they move nectar and pollen out of the way and give the cells a polish.

Too many eggs per cell

- (a) Young, inexperienced queen, usually settles down quickly to laying one egg per cell.
- (b) Something happened to queen and **laying workers developed.**

Scattered brood

Same-age brood scattered over the comb, not in adjacent cells, means:

- (a) A failing queen running out of sperm.
- (b) Something is killing the brood. In early spring, cold nights when there are too few adult bees to keep the brood warm can result in chilled brood. Sometimes pesticides or poison pollen can cause scattered patterns.
Clue: Is only one colony showing the symptoms, or are several?

Raised cappings on worker cells

The cappings look like the ends of bullets. Cause: Drone brood is developing in worker cells, because:

- (a) Queen has become a drone-layer. Usually her sperm reserves are depleted, due to her age.
- (b) Laying workers; lay only infertile eggs, resulting in drones.

Raised cappings in drone cells

Normal drone brood has a 'bullet' look, but not as pronounced as when it is in worker cells. Normally, queens lay unfertilized eggs in the larger (both in circumference and depth) drone cells. These are frequently found around the bottom edges of the brood comb and in areas where the comb has been damaged. The presence of some drone brood indicates a vigorous, well-nourished colony.

Queen cells

Queen cells are constructed along a vertical plane, as contrasted with the horizontal plane of worker and drone brood cells. They somewhat resemble peanuts (in the shells).

- (a) Queen cells near the centre of the comb, growing out of worker brood cells – these are replacement cells the workers have developed in emergency, loss of a queen.
- (b) Queen cells everywhere, particularly near bottom of comb. This is swarm preparation—the old queen will soon depart with about half the bees (called the 'prime swarm').

Tip: For a quick check of swarm preparation, in a hive with two brood boxes, break the boxes apart and look along the bottom bars and bottoms of the combs in the top box. Most colonies preparing to swarm will show cells along comb bottoms.

Dead larvae (not white)

- (a) Chilled due to cold snap (usually in spring) when there are too few adult bees to keep the brood warm
- (b) Died due to lack of care for some reason.
- (c) Disease: Sacbrood, American foulbrood, European foulbrood. Call the Bee Inspector.
- (d) Pesticide damage.

Mummified larvae Older stage larvae turn white and hard.

This is probably Chalkbrood.
Mouldy pollen

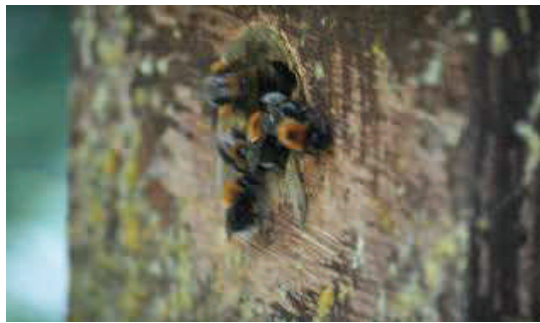
Soft, white stuff in pollen cells -

probably due to insufficient hive ventilation. What about mites? After some training, you can pretty easily identify Varroa mites on adult bees' abdomens and on your open mesh floor tray. Also, you can uncap pupae and pull them out of the cells and check for dark Varroa attached to the white pupae. Varroa are especially attracted to drone brood and can often be found in the bottom end of the cells from which drone pupae are extracted. They may run out of the cells as pupae are being extracted.

*Adapted from the Beehive, published by Northwest
Ohio Beekeepers Association. Spotted by
several editors,*



Your Beetalk Editor Michael at the Big Bee Farm in Chonburi, Thailand. They have some mighty big bees over there.



"The Rise and Rise of the Tree Bumble bee", a lecture from Stoneleigh by Ben Darvill

This Bumble bee was found in Britain in 2000 and has rapidly spread all over Britain. It often nests in bird boxes and the males "swarm" around the entrance in the summer waiting for queens to come out. This has led to many more calls from the public to beekeeping associations to come out for swarms. Even though generally Bumblebees will not sting unless highly provoked this Bumblebee is a little more defensive than most and is highly sensitive to vibrations and will sting more readily if disturbed. Calwyn and I got called out to one of these "swarms" last year. The bird box was in a small enclosed garden and the owner wanted them removed as he had small grandchildren. It was easy enough to move them to our own garden by blocking up the entrance to the box and carrying them away. Some bees may be left behind as they sometimes stay out overnight.

With thanks to Gwent Beekeepers Association

When to add supers to your colony

Although supers are used for storing honey their main purpose in the early Spring is to make room in the brood chamber for the queen to be able to lay it out fully. This can be achieved only if room is given above the brood chamber (BC) for the bees to move the stores - from the BC - into the first super placed immediately above the BC. Supers are usually shallow boxes but deep boxes can be used as supers. The disadvantage of the latter is that they are very heavy to lift. In each case a queen excluder must be placed between the BC and the super. Beginners will not have drawn supers available, so supers containing foundation have to be used. These are best added without the queen excluder and at the next Inspection - ten days later - the queen excluder can be added. After adding the queen excluder the super must be inspected to ensure the queen is below. Even if you have drawn supers it is helpful to put them over the BC without an excluder until the next inspection, since this gets the bees into the super quickly.

Scratching the surface of sealed stores on the outer frames of the BC encourages the bees to move the honey to the super. When the middle six super frames have been drawn and covered with bees it is then time to add the second super. I would recommend adding it under the first. At this time I would exchange the drawn super frames in the centre with the partially drawn frames on the outside of the cluster of bees. The super frames will have been on narrow spacing (37 mm). When all frames have been fully drawn they can be wide spaced (50 mm) apart. Correct spacing can be achieved using large plastic ends. In fact, narrow plastic ends need not be used at all because narrow spacing can be achieved by using large spacers on alternate frame ends to get narrow spacing of the frames in the first instance. Some beekeepers prefer not to use spacers at all because they space the frames by eye! Wide spacing lends itself to easy uncapping of the frames before honey is spun out using the extractor, and if no spacers have been used then no time is wasted pulling them off the frames before extraction and replacing them afterwards. Additionally, fewer frames means less cost. Some people use Manley frames which can be used without the need to change the spacing for foundation or drawn combs; however, they were designed for machine uncapping and when propolised are difficult to remove manually from the super. If the weather is likely to be cool, or very cool nights are forecast, and the bees are foraging on oil seed rape (OSR) then it may be wiser to put the second super on top so that the OSR honey is kept warm and is less likely to crystallise. With OSR honey it is best not to wait for all the cells in the frames to be capped, as there is the danger of the honey crystallising. Thus the frame cannot be spun in the extractor to obtain the honey that then has to be cut out and melted. The suitability of the uncapped honey can be ascertained by shaking the comb over the super and if any falls out it is insufficiently ripe for extraction. Do this test in the morning as if left to the afternoon there will be lots of recently collected nectar, to drop out, that needs the following night in the hive for the bees to reduce its water content. Finally, one should have a third super ready and installed before the second is full of honey and bees.

From Essex BKA author : 'Pollinator'

The editors stingless bees at the Big Bee Farm, Banglamung, Chonburi,



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