



Beetalk

Newsletter of The Blackburn and East Lancashire Branch of
The Lancashire & North West Beekeepers Association
March 2011 www.blackburnbeekeepers.com Registered Charity

COMMITTEE MEMBERS CONTACT DETAILS for 2010—2011

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Michael Birt. Web Master/Beetalk Editor			webmaster@blackburnbeekeepers.com
<u>DELEGATES TO THE CENTRAL COUNCIL</u>			
Philip Ainsworth. Hon. Treas.	0771 3161480	email	philipainsworth@btconnect.com
Vici Winstanley. Hon. Sec.	07827292844	email	vicicoaffee@yahoo.co.uk

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
David Rayner on 01200 426898

MEMBERSHIP

REGISTERED MEMBER. Subscription for the 2011 season will be £20.00

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 £13.00

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 £11.00

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.

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,
ROSSENDALE
AREAS

Bob Fulton

Telephone 01254-772780

E Mail:::: home.brew@talktalk.net

CLITHEROE AND SURROUNDING AREAS

John Zamorski

Telephone 01200-427661

E Mail::::: john@johnzamorski.wanadoo.co.uk

David Bush,

Telephone **01200 428152**

Email :::david.bush2@talktalk.net

BURNLEY, NELSON AND SURROUNDING AREAS

Bill Ainsworth

Telephone 01282-614015

E Mail::::: billscotroad@o2.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.

FUTURE BRANCH MEETINGS

23rd March 2011 @ 7pm

Burnley Football Club .

Annual Dinner/Dance

17th April 2011 @ 2pm

Towneley Hall.

Swarm control with John Zamorski

15th May 2011 @ 2pm Towneley Hall. Rock on– Soaps and cosmetics with Fliss Hawksworth

**Details of all the meetings can be found on the web site on the events page at
www.blackburnbeekeepers.com**

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 2011 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" is 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 Michael Birt at webmaster@blackburnbeekeepers.com

Well we are at last through one of the coldest winters ever. It should have been no real problem for you bees if the bees had built up strongly in autumn of last year, were well fed and had adequate stores and were protected from damp entering the hives over the dormant period that the bees were clustering. Hopefully we will have a good season with plenty of meetings and great speakers. As most of you know nearly all of our meetings will now be held at Towneley Hall. We are very lucky to have this superb venue for our regular meetings as the facilities are second to none. Apart from Towneley Hall our annual dinner will be held this year at Burnley football club. The old venue was great but due to the increase in membership became too small, hence the move to the football club. The dinner by the way is on the 22nd of March. Details can be found below or on the web site in the events section. At the time of writing this editorial we have had 2 meetings, both of which are reported in detail in this edition of Beetalk.

The mentoring Scheme is now all sorted out and details can be found later on in this edition. For all the beginners this is where you need to be as you are so lucky to have a mentor, so you must take full advantage.

If there is anyone wanting to take the Basic Husbandry Exam, Dave Rayner will be holding lessons at Bashall Barn, near Clitheroe, starting late April. These lessons are free to club members. Anyone interested should contact Dave on davidrayner1@yahoo.co.uk. Dave will have to contact the Lancashire Education officer to inform him of the numbers, so that he can sort out the examiners and numbers. **So please contact Dave ASAP**

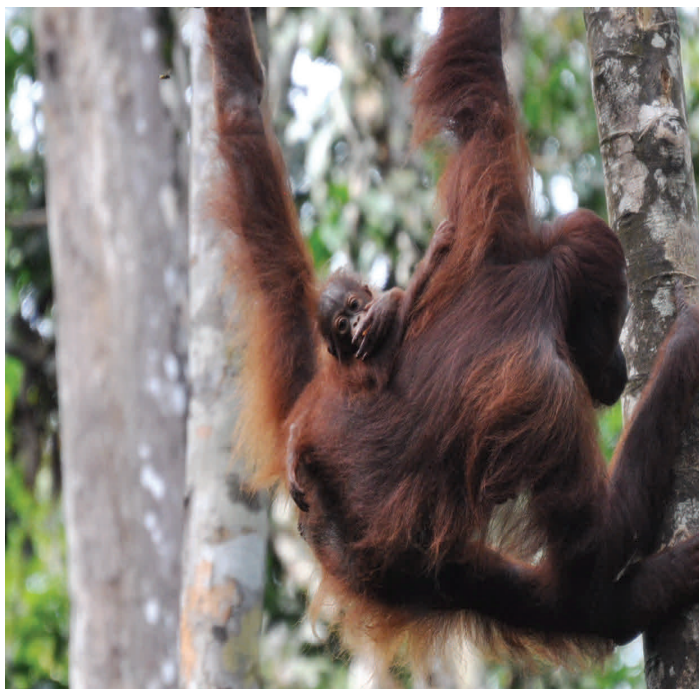
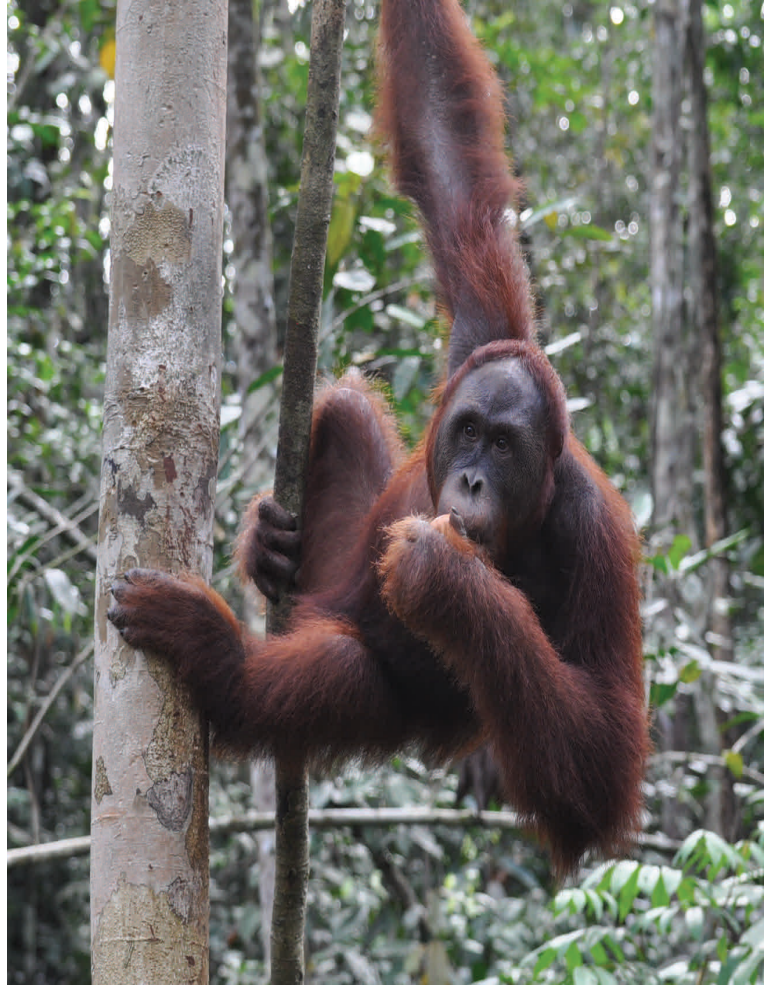
Bill Ainsworth's Black Bees in Pendle group is also a great group to join, if you are in Bill's area and you can get your bees as quiet as Bill's as you cannot go wrong. Bill can be contacted through his blog at http://www.arthurbick.co.uk/better_bees/Blog/Blog.html

I am pleased to announce that John Zamorski our seasonal bee inspector is to carry on for another year, there was fear that due to all the government cuts that he may not have carried on. John can be contacted at Tel: 01200427661
Works mobile: 07775 119446 from April.

I write this editorial from a longhouse where I am staying in Borneo, a long way from the UK and a completely different world too. I looked for honey bees but could only find the Giant Asian Honeybee (*Apis dorsata*), but I was told there are (*Apis andreniformis*) and also (*Apis nuluensis*) knocking about locally. I did see around 6 species of stingless bees which is a good sign of a healthy environment. I am only here for about 10 days and am travelling about quite a lot as I want to see more of the lovely place. I took some pictures of a tribe of orangutans and although they have very little to do with beekeeping I thought I would like to share some of my experiences with these highly intelligent and enchanting animals, which by the way share 97% of our DNA

Anyway hope all is well for you all and that you are all ready for the coming season.
Best wishes Michael

A few pictures of a troop of Orangutans taken in the jungles of Borneo



Mentoring Scheme

I wanted to give you an update on the mentoring scheme I have now received all the information on who would like to be a mentor and who wants to be mentored. It is clear that we have more individuals that want a mentor than individuals wanting to be mentors. Therefore I will be looking at ways to increase the number so I can ensure you all will have a mentor as soon as possible.

I will shortly be sending emails to those that I have matched with a mentor so please don't worry if you have not received an email. I haven't forgotten about you and I am working very hard to secure new mentors to support in times of need and to pass on valuable knowledge and skills.

Please let me know if you have any queries.

Also - Please don't forget we have the Annual Dinner Dance on the 23rd March at Burnley football club and this will be a great opportunity to pick the brains of fellow beekeepers. For details on the Annual Dinner please see the Website under the events page at www.blackburnbeekeepers.com

At the moment we have 27 members would have requested to be mentored and 9 members who have offered to be mentors.

We require more mentors to pass on their skills and experiences, so if anyone is interested please could they contact me on 01282-701692 or by e-mail at vicicoaffee@yahoo.co.uk

Also if anyone needs a mentor, please contact me with your details and I will pass you on to the relevant mentor.

Many thanks

Vici Winstanley
Hon Secretary

When Vici has all the names of contacts of the mentors I will put all the details onto the web site.

It's not been an easy task for her and I hope that you will appreciate all the hard work that she has put into sorting all this out.

What I suggest is not to send her home from the dinner/ dance sober.

Michael

Basic Husbandry Exam

As mentioned earlier in the editorial Dave Rayner will be holding lessons at Bashall Barn, near Clitheroe, starting late April. These lessons are free to club members. Anyone interested should contact Dave on davidrayner1@yahoo.co.uk.

Dave will have to contact the Lancashire Education officer to inform him of the numbers, so that he can sort out the examiners and numbers. **So please contact Dave ASAP**

ASSOCIATION MEETINGS.

January 2011 meeting

This was our first meeting in the new venue at Towneley Hall in Burnley. The facilities are second to none and the lecture theatre was the perfect location for John Zamorski to start the year off with his talk on Bee Diseases and Varroa.

For those of you that are not aware John is a Seasonal Bee Inspector for the Northwest as well as being the Bee Disease Liaison officer for our association.

In John's interactive session he talked through and answered questions on some of the diseases namely Nosema, EFB and AFB and the ways of managing this with and without medication. John demonstrated and explained the kits that can be used to test for these diseases.

John and also spent some time on explaining the life-cycle of the Varroa mite. This is key to the understanding how to prevent and manage Varroa in the Hive and in John's words "you need to know your enemy".

As it was our first meeting of 2011 the refreshments were paid for by the committee and normally would of cost £1 per person.

On behalf of the committee and members I would like to thank John for his very informative session.

We also look forward to seeing you all for the next meeting on the 20th February 2011 at Towneley Hall where Bill Ainsworth will be giving an update on the Black Bees.

VICI



John doing his talk



A captive audience



Any questions



After talk discussions

Monthly Meeting 20th February 2011

The meeting at Towneley Hall Lecture room was very well attended with 45 members present. Bill Ainsworth gave a very interesting talk on his methods of assessing Varroa levels in his colonies and his treatments. He stressed the importance of open mesh floors and the use of the insert to catch the natural mite fall and so work out whether to take action or not. He mentioned that some people may have the open floors but are not using the insert to catch the mites so would have no idea what infestation there is in the colony.

He then went on to describe his plans to have only dark bees in the Pendle area. Because the area is fairly well surrounded by hills and moorland if everyone in this area kept the same kind of bee the chances of raising better queens would increase. This would be very difficult if there are bees being brought in from other areas or countries so it was stressed that he would need support to help achieve his goal. Further information on this can be found in a link on our club website.

John Zamorski announced to the membership that he was to continue for another year as Seasonal Bee Inspector and was available to speak to anyone if needed. He mentioned the importance of being registered with BeeBase and also asked for people to use and support the club website, which was run by Michael Birt.

www.blackburnbeekeepers.com

After a fairly brisk round of questions the meeting broke up for tea and biscuits and a raffle. It should be noted that we have the use of the Lecture Hall free on the understanding that we purchase our tea and coffee which is supplied by Towneley at the reasonable cost of £1 per cup. The facilities are excellent and I think we now have a great venue for meetings and look forward to the better weather when we should get the chance to open the bees.



Bill quenching his thirst in between talking



A captive audience



Vici taking notes

My Journey

Six to eight months ago I wouldn't have knowingly gone within a hundred yards of a Bee Hive. I, probably like millions of other none Bee Keepers, was of the mindset that if there was a couple of hives around then there would be millions of bees flying about and in your face, swarming in great clouds with the sole intention of attacking you and stinging any area of skin they could find! Enter Bob Fulton and Michael Birt. I met Michael through Bob and I found Bob by reading a few write ups which our local newspaper carried over the past two three years about Bob and his Bee-Keeping. The most recent one was different from the others in that it included a telephone number, Bob's. I rang the number with the intention of asking him if he knew where I, as a complete novice could find someone who would be willing to give me some pointers on Bee Keeping. Eureka! I had only rung the very man in my area of town that was actually doing that and was keen to introduce new Bee Keepers to this fascinating hobby. He invited me to one of his sessions held on a Sunday afternoon. That's where I met Michael. Between them they filled my head to bursting point about Bee-Keeping. None-the-less I attended a few more of these sessions. Most of it was way above my head. Don't forget that I knew absolutely nothing about bees. But was fascinated by the prospect of being able to successfully keep a hive. I suppose what I really needed was a complete beginners course starting from, this is a bee, this is a bee suit, this is a hive where the bees live. Get the idea? It was music to my ears when Bob announced that that was exactly what he and Michael had in mind. I have so far had about four sessions during which I know what a bee looks like. I am learning about the life cycle of the bee. I have learned that a hive consists mainly of worker bees which are female; then there are drones which are male and do not sting. Apart from occasionally helping to control the temperature of the hive their only function is to mate with the queen. I have learned that a colony consists usually of one queen. Another thing I learned only last week is that in order to reduce or stop bees from swarming you create a false swarm using the Currie method. Bob will need to go through the procedure a few more times I think before it is finally registered and sunk in. Next session has something to do with Oxalic Acid which is planned for mid December. I have my own bee suit and hive tool. I also bought myself a pair of genuine kid gloves from Thornes. This was met with a scolding from Bob. "If you need gloves like that you'll never make a Bee-Keeper, how are you going to be able to feel the queen when you pick her up in order to mark her" Pick her up!! I never in a thousand years dreamt that I would actually have to physically handle the critters. Duly chastened I keep them in the boot of my car in case some other hapless novice wants to try them out. We are provided with print outs and a couple of DVD's which are part of the course. I certainly appreciate the work that Bob and Michael have put into the making of the DVD's. It does exactly what I want, you know, this is a bee, this is a bee suit and this is a hive etc.

I live in a terraced house without a garden so I am on the lookout for an allotment or somewhere to keep my bees. This is not as easy as I thought, mainly due to the mind set of non Bee-Keepers who think like I did six months ago. I have finally had an offer from a kindly gentleman who says I can put a hive on his plot. I might go down that road if I can't get somewhere of my own. Bob tells me that I won't have any bees till about June of next year so I have plenty of time. Bob and Jean (Bob's long suffering wife) suggested I put my bees in a shed. Titter ye not! After discussing it in detail I reckon that that is the way I am going to go to get started.

BREAKING NEWS! I received a call from Bob saying that he has a swarm and to get over quick if I want to see it. I was over in just over five minutes. I missed seeing it actually airborne but Bob took me to this lane near his home and as we turned the corner by a small tree, there it was, a heaving mass of maybe ten to fifteen thousand bees (Bob's estimate, not mine) just about eight to ten feet away on a low branch, it was shaped like an elongated rugby ball. Bear in mind that I had no suit or hood on, just me in my shirt sleeves. This is the guy who, up to a few months ago wouldn't have gone near a hive never mind a live swarm. I must admit that I was experiencing a mixture of fear and awe. There is no question about me being afraid but seeing Bob so calm and obviously in control. I reckon that, unlike me this was not the first swarm he had seen. Under the tree was a pile of bricks which Bob was able to stand on and with a sharp flick about 80% of them dropped like a stone onto the ground. I noticed that Bob had placed a brood box with about five frames in and a small bottle of feed to the right of the tree from where I was standing. He said "come on let's leave now, they are looking for a new home and they won't find one better than what I have provided" He made me feel quite safe even though as soon as they hit the floor, he said "let's get out of here pretty quick", not quite those words but I understood exactly what he meant. He said "I'll come back about seven when the light starts to wane and take them back to the apiary". I can still hardly believe what I saw and this was during September which Bob says is very unusual, probably due to the late summer. It was surreal and something I will never forget.

This is the first episode of my journey as a Bee-Keeper. If you are an experienced Bee-Keeper and have read it so far you will no doubt be cringing at certain inaccuracies and anomalies but that just goes to show that I am a genuine novice who has never ever kept bees before and only seen a bee hive on television and in magazines. But I am determined to learn as much as I can about this fascinating hobby.

If Michael accepts what I have written then I hope to continue telling whoever wants to hear about my journey as a Bee-Keeper

Regards

The Novice

PS I have only been stung once so far!!!

Nice one The Novice. Its good to get a few contributions from our members and maybe this article will encourage others to write in

Wood preservers for beehives

In recent weeks, a few other beekeeping association newsletters have identified that the formulation of certain Cuprinol products has changed. A quote from the Cuprinol website (accessed 5 November 2010) states that: "Due to EU legislation Cuprinol has had to change the active ingredients which are used in its wood preservers. New formulations have not been tested for use on beehives and as a result Cuprinol cannot recommend any of its wood preservers on beehives." These new products have the initials BP at the end of their name.

The Cuprinol Technical Advice Centre have also given the following further information:

Products with names ending in BP are not suitable for beehives.

The BP formulation is currently under testing. They hope to have the results in 2011.

Until then, the only products which are suitable for the exterior surfaces of beehives are as follows:

- Cuprinol Garden Wood Preserver (DP) Red Cedar (Brush Apply)
- Cuprinol Trade Decorative Wood Preserver (T) Red Cedar (Brush Apply)
- Cuprinol Trade Low Odour Wood Preserver Clear (T) (Dip Apply)

However, these products have been discontinued and only BP formulation products are being produced. It should be noted that Cuprinol stress that products which are suitable for beehives must only be applied to the outside surfaces.

Editor, via eBees (Stratford-upon-Avon and others)

A code of conduct for beekeepers

For the first time in 25 years, I am going into winter without a hive. It's a bit like a bereavement. What makes it worse is that with a little communication, it could have been avoided.

We had two colonies, one fine, the other small. I was watching their progress closely with a view to uniting them. I'd taken the normal precautions against wasps, narrowing the entrances so that there was just a small gap at each end; clearing the windfall apples from near the hives, and putting wasp traps on the hives (from which I couldn't resist rescuing the occasional hornet). Then disaster. Unbeknownst to us, a beekeeper whose hives are about 250 yards from ours as the bee flies had taken off all the honey from 10 hives, leaving them unfed. After a couple of very rainy days, we returned from a family party to find the air thick with bees and carnage outside the hives. Too late, but we did what we could – left just one bee hole in the entrance block, put a sheet of glass across the front of the hive, and even moved one hive right away.

Had we known, we could have protected the bees better. I would have enjoyed standing guard with a hose, drenching the marauders. I could have removed the honey stores, if only temporarily, as we always winter the bees on a brood box plus a full super of honey.

I realise that part of the problem is a culture clash, between a highly managed style of beekeeping and my more bee-centred approach. I also realise that we are lucky to have our bees in our own garden, and to have had no neighbouring hives for so many years. And over those years, I have spent time just watching them, virtually every day. I've seen them develop mutual grooming, which I hope and presume is their response to Varroa. I've observed things I've never heard about, such as the way the workers sting the drones in the eyes, when they turf them out of the hive at the end of summer.

Presumably the bees can retract their stings from the soft tissue of the eye without damaging themselves, but cleverly blinding the drones so that they can't get back in the hive.

So what I am suggesting is that if any beekeeper is going to do something that is likely to have an impact on neighbouring beekeepers, they should inform them. I'm sure we are all agreed that bees need all the help they can get.

Lindy Paramor, Salisbury

A Handy Checklist

Over the last month or two, I have had a number of calls from new beekeepers phoning to check about problems which they have encountered with their bees this season. As always, my advice is to get to know what normal healthy bees and brood look like and check if you are unhappy or not sure about what you see in your colony—quite often Sally or I will go and have a look at them with the beekeeper.

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. I came across this check list recently 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 brood nest

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 brood nest

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.

continued

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 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: Sac brood, 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.,

Beeswax Hand cream

Ingredients:

1 oz clean beeswax

5 fl oz almond oil

1 oz coconut oil

30 ml rosewater

¼ teaspoon borax

Method

Heat together the beeswax and oils in a water bath until melted.

Heat the rosewater, add the borax and stir until completely dissolved.

When both mixtures are just warm, mix together and stir well until fully emulsified.

Pour into pots or jars.

Please be aware that this recipe uses beeswax which is very flammable.

With thanks to L&DBKA and eBees

Bees in winter

Bees do not hibernate as such as they are cold blooded. Their body temperature varies with the temperature of their surroundings, the critical body temperature for an individual bee, below which it will become immobile and die, is around about 6 -8 degrees centigrade . If a bee keeps flying the muscular action will raise the temperature of the muscles and the heat will spread through the body, keeping the bee warm and enabling it fly in temperatures below freezing.

When the temperature outside the hive falls to about 15 degrees centigrade the bees will stay inside their hive and get into a big huddle, with the queen in the centre, this is called a winter cluster. As the bees have hairy bodies this is a very effective way of retaining heat. There is no point in the bees flying as there will be no flowers in bloom for them to collect nectar or pollen from.

The cluster will form so that it is in contact with the supplies of food in the hive and as the weather becomes colder the cluster will become more dense, the effect of this being to reduce heat loss. The bees in the centre of the cluster create heat by activity, which will radiate out through the cluster. The temperature in the centre of a brood less cluster is kept at about 20 – 30 degrees centigrade which keeps the bees on the outside of the cluster at about 9 degrees centigrade, should the temperature drop much below this then the bees on the outside will become too cold, drop off and die.

As the bees in the centre get hungry they move to the outside of the cluster, where the food is located and the cold bees on the outside move to the centre to warm up. The queen stays in the centre of the cluster where she is fed by her workers and protected from the cold.

The loss of heat from the cluster can be controlled by its expansion and contraction and by the amount of honey consumed. Warm spells during the winter mean that the cluster can loosen and then re-form closer to the food stores and allows bees to make short trips out of the hive to defecate and to collect water, which they need to dilute the honey. Sometimes if they go too far or stay out too long they get chilled and can not fly back to the hive.

The winter bee is rather different to the summer bee; bees that hatch in the autumn, when the queen is laying fewer eggs and there is far less brood to feed, can consume large amounts of pollen which they convert into fat bodies in their abdomen. This combined with having less work to do than the summer bees means that they can live considerably longer, up to six months compared to 35 days or so for a summer bee.

Because the winter bees need to survive for a long time to ensure the survival of the colony, it is advisable to use a Varroa treatment in the autumn, to ensure that levels are low and the winter bees remain as healthy as possible. A treatment of Oxalic acid in December or January when there is little or no brood in the hive will also help.

Feeding the bees in the autumn is important as this will ensure that the queen carries on laying and these eggs will develop into the winter bees needed to ensure the survival of the colony. A large colony is better equipped to survive the cold of winter. A large colony will however need plenty of stores and so it is important to heft your hives during the winter and into the spring to check that there are sufficient stores, a very dry summer this year has meant that autumn forage was in very short supply, the bees, in many instances did not get the chance to bring in any stores of their own and started to use the sugar syrup fed in the autumn very early on. If the colony has insufficient stores, or if the bees can't get to the store because they are too far away from the cluster, the colony can not keep itself warm and will die of cold and starvation.

If you are in any doubt that your colony has sufficient stores put a block of candy over the cluster so that it is within easy reach of the bees, there may be frames full of feed on the outside of the hive but if the bees are too cold to get to it they can still starve.

Mice, woodpeckers and badgers also like the contents of your hive, and very cold weather will make them more determined than ever to get in, so make sure that mouse guards are fitted, put wire around the hive if you have woodpeckers about and if there is any danger of badgers or other large animals knocking the hive over use a hive strap to fasten the roof down and check the hives regularly.

Judy Marshall

With Thanks to **RUTLAND BEE KEEPING ASSOCIATION** and e-bees

Arctic Honey - It's Tough Up North

If you think we have had a hard winter, then think again. Imagine, if it was continuously dark for three months of the year and the majority of precipitation fell as snow.

Not exactly ideal conditions for beekeeping perhaps, but these are exactly the conditions that Sis Heidi Hansen experiences - She is the world's northernmost beekeeper. Sis Heidi lives on the island of Rolvsøy in Northern Norway. At 71° North, the only land between Rolvsøy and the North Pole is Spitzbergen. Both Murmansk and Iceland are South of this apiary at the edge of Europe. And yet Sis Heidi says her bees do very well and she has no complaints.

Despite the Northern latitude the Gulf Stream keeps the island warm so that last winter the temperature only fell to -15°C. This is not as bad as you might expect, farther inland the temperature can easily fall to -30°C. The flip side of a long dark winter is a truly excellent summer, when the bees (and the people) don't ever seem to sleep. From May to July the sun doesn't set and in midsummer the temperature is over 20°C.

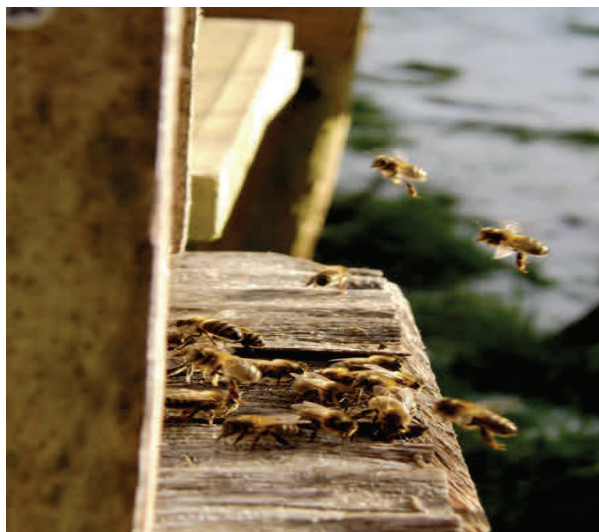
Keeping bees in the far north is a little different to keeping them in Shropshire. Sis Heidi has 6 hives which she keeps in an open sided shed to protect them from the strong sea breezes. She cannot protect the hives by putting them in woodland or behind a hedge because there are no trees on the island. Like many Norwegian beekeepers her hives are insulated Langstroths, on stands with a huge landing board that goes right down to the ground. You might think that vermin would use the landing board to get into the hive, but on Rolvsøy there are no mice or ants to attack the hives. Like us, here in Shropshire, there are also no worries about bears, which can be a problem elsewhere in Norway.

Along with having no mice or bears to worry about, the beekeeping conditions on Rolvsøy remind us of happier times before Varroa came to our shores. Varroa is present in the South of Norway but it has not yet made it this far North. The bees themselves are relative Southerners coming from Trondheim over 600 miles to the South.

Trondheim is at about the same latitude as Reykjavik, so the bees are already adapted to long dark winters and short intense summers. Even using locally adapted bees, it is not possible to

Leave the hives out over winter. During the dark winter months the hives are moved into a cellar, where the temperature is a consistent 3°C, to avoid the worst of the winter storms. Despite the short summer the hives can be productive, last year the honey harvest was around 35lbs per hive. The harvest isn't guaranteed, in 2008 it rained continuously so there was no honey at all. The compensation is that arctic honey commands a high price. Sis Heidi sells her honey for a breath taking £50 per pound. About five times the usual price in Norway. Some years there is a harvest of cloudberry honey which flowers in the early spring. The cloudberry is considered a delicacy in Norway, so Sis Heidi has been able sell her cloudberry honey at even higher prices. It might be tough up North but is not so bad for beekeepers.

From e- bees Courtesy of L&DBKA Newsletter September-October 2010



Brief respite - A "balmy" 7°C on the 9th December allows cleansing and undertaker duties

Picture with thanks to West Cornwall BKA and e-bees

EU to address mysterious collapse of bee colonies

The European Commission suggests that more research is needed to find out the exact cause of the sudden increase in bee mortality across the EU.

Since 2003 there have been reports in Europe and the United States of serious losses of bees from beehives. This has caused serious concern all over the world as 84% of crops need insect pollination, and more than 80% of wild flowers require pollinators to reproduce.

While everything from viruses, pesticides and genetically modified crops have been suggested as potential causes of the high mortality rate of bees - called 'colony collapse disorder' - scientific studies have not been able to determine the exact cause or the extent of the increased mortality, the European Commission said.

The EU executive yesterday (6 December) adopted a communication on honeybee health, giving an overview of the key issues related to bee health and outlining EU-level initiatives and actions undertaken in recent months.

As bees play a crucial role in pollination, "the disappearance of bees could mean fewer types, as well as a lower yield, of crops, fruits or flowers," the Commission warned.

The European Conservatives and Reformists (ECR) group in the European Parliament stressed that "76% of food production and 84% of plant species are dependent on pollination by bees". "Bees are indispensable for food production," said British ECR MEP Julie Girling.

While pollination can be carried out by other insects, the Commission points out that these are also disappearing. The EU executive underlined that there is "a more general decline of some other insects," such as butterflies, wild bumblebees and hoverflies, probably because "their habitats have shrunk or have been affected by adverse effects on the environment over the years".

Pesticides, GM crops to blame?

A 2009 report by the European Food Safety Authority (EFSA) on bee mortality and bee surveillance in Europe suggests that there are many factors involved in the causes of the decline in the bee population. In its study, the agency considered the following: bee diseases and pests, pesticide poisoning, the impact of genetically-modified crops, and stress linked to changes in nutrition and climatic conditions.

However, the Commission said "the leading cause remains unknown at this stage" and called for more research to be carried out. It also suggested setting up a programme to monitor bees in the EU to ascertain the precise magnitude of the losses.

While the link between increased bee mortality and the cultivation of GM crops has been widely reported, the Commission underlines that "no difference has been recorded" between areas where GM crops are extensively cultivated and areas in which they are much less common or prohibited.

"This situation does not support the hypothesis that increased bee mortality is related to an increase in the cultivation of GMOs," the Commission said, adding nonetheless that it would still continue to closely follow any developments in this area.

As for the use of pesticides, current EU laws stipulate that pesticides must be approved if their use does not have a detrimental effect on bees. But local honeybee incidents still occur when, for example, farmers spread pesticides on fields during the afternoon, when bees are outside pollinating.

According to the EFSA study, "high concentrations of pesticides have rarely been identified as having any correlation with colony losses, although acute events of pesticide toxicity have been identified during the production season".

Sent in and with thanks to Caroline Coughlin

Secret to a smooth hangover – honey on toast

If you are planning to overindulge this Christmas then it would be a good idea to stock up on bread and honey as well as booze.

By Richard Alleyne, Science Correspondent. Daily telegraph

Scientists claim that the natural sweetener is a great way to help the body deal with the toxic effects of a hangover.

The Royal Society of Chemistry claim that the fructose in the honey – which is also found in golden syrup – is essential to help the body break down alcohol into harmless by-products.

The reason why hangovers are so painful is that alcohol is first broken down into acetaldehyde, a substance which is toxic to the body, claimed Dr John Emsley of the Royal Society.

This is then converted – using fructose – into acetic acid which is then burned during the body's normal metabolic process and broken down into carbon dioxide which is breathed out of the body.

Serving the honey on toast adds potassium and sodium to the meal which is also helps the body cope with the alcohol.

Dr Emsley said: "The happiness comes from alcohol. The hangover comes from acetaldehyde. "This is the toxic chemical into which alcohol is converted by the body and it causes a throbbing headache, nausea, and maybe even vomiting.

"The hangover disappears as the acetaldehyde is slowly converted to less toxic chemicals."

Dr Emsley, author of the Consumer's Good Chemical Guide, said that the time was the greatest healer of a hangover but there were also ways to minimise it.

He said that drinking a glass of milk first, sticking to clear alcohols such as gin and mixing in the occasional soft drink were helpful as was sinking a pint of water before you go to bed.

He said: "The milk slows down the absorption of alcohol, which means there is less acetaldehyde for the body to deal with at any one time.

"Gin is alcohol twice purified by distillation and the botanical flavours it contains are mere traces. Avoid dark coloured drinks which contain natural chemicals that can adversely affect you.

"Alcohol increases water loss, hence the frequent trips to the loo. This dehydration makes a hangover worse, so moderate your drinking with a soft drink now and again, and drink a large glass of water before you go to sleep."

He said that the traditional "hair of the dog" only worked if you have drank so much alcohol you suffer withdrawal symptoms, which suggests you are becoming addicted.

What goes around, comes around: honey for wounds

From a lecture given to Montgomeryshire BBKA

In October, Dr Rose Cooper, Professor of Microbiology at the Cardiff University gave a fascinating lecture on the anti-bacterial properties of honey and how it may treat wounds, ulcers, lesions, burns etc. Honey is composed of moisture, fructose, glucose, sucrose, maltose, other sugars, ash, nitrogen and over 600 low level components such as flavonoids, terpenes, organic acids and newly discovered bee defensin-1. It has a pH of around 3.9 (acidic). The anti-microbial properties were first identified in 1892 by Von Kellner and in 1937 Dold discovered what “inhibine”, the magic anti-bacterial component.

Different types of honey have different types of properties, and darker honey is richer in anti-oxidants. Author Michelle Boudin wanted a grisly picture of a wound healed by a Manuka dressing but Professor Cooper replied “Unfortunately I am not able to give you the grisly photos, as they are restricted by copyright agreements and patient confidentiality issues. Here is a picture of a Manuka plant, though” Dr Cooper specialises in monofloral honey, in particular Manuka (*Leptospermum scoparium*), a tree native to New Zealand. It grows abundantly there but with its mild antiseptic taste, beekeepers unable to sell the honey, considered the trees a nuisance and dug them up until their anti-microbial

properties were discovered. Only New Zealand’s Manuka honey can be labelled with a Unique Manuka Factor, UMF (5, 10 or 15). The antimicrobial properties are compared to phenol. If Manuka is as effective as a solution of 5% phenol it is UMF5, if it is as effective as 10% then UMF10 etc.

Manuka honey is a broad spectrum anti-microbial agent, treating bacteria, fungi, protozoa and viruses.

Dr Cooper's work on MRSA has shown that it prevents cell division and in *Pseudomonas* it affects the surface causing the bacteria to rupture and die. Studies reveal that bacteria are unlikely to develop resistance to honey. Other studies show that diluting honey by 50% is more effective as small amounts of hydrogen peroxide is created. Manuka doesn't grow well in the UK. Some specimen trees can be found in the Isle of Wight, Kew and the National Botanical Garden of Wales. A plantation in Cornwall at Lord Falmouth's Tregothnan estate sells its British “Manuka” honey exclusively to Harrods.

Dr Cooper showed some graphic before and after pictures of typical untreatable wounds seen in the clinic. In particular she recounted a landmark case of a boy aged 15 who was admitted to hospital in January 1999 with life threatening meningococcal septicaemia. He was in intensive care and his fingers and lower legs amputated. By September 1999, still hospitalised, he required a general anaesthetic just to have his dressings changed due to the severe pain. As a last resort medicinal honey dressings were applied, on one leg only, the other left as a control. The results were simply astonishing and by Christmas he was allowed home. 1% of the population under 65 suffers from wounds but after 65 this increases to 4% as wound healing slows down as we age. Circulatory disorders such as diabetes, chemo or radiotherapy and some medications also delay healing. Treatment costs are high, antibiotics, antiseptics, dressings, ongoing nursing care, increased hospital stays meant in 2007 the NHS spent £29.3m on silver dressings alone! Medihoney licensed in 1999 in Australia is used in open heart surgery across the world. Other commercial dressings are now available. So why isn't honey routinely used in the UK? The NHS has been slow to adopt the honey dressings over the silver ones as evidence is supposedly lacking (in spite of 17 clinical randomised controlled trials). However further studies are ongoing in Bonn with cancer patients and elsewhere. Can we use our own honey to treat wounds? Sadly not. As Dr Cooper points out, honey is usually sterile until uncapped but 10% of honey is contaminated with *Clostridium botulinum*, (Botulism). Medicinal honey is irradiated making it sterile though Germany is investigating a filtration method Dr Cooper firmly believes that whole honey must be used and attempts by pharmaceutical companies to isolate the one active constituent is unwise because honey is so complex. Once again the marvellous healing power of honey was clearly demonstrated in this lecture.

Michelle Boudin (Herbalist MAMH)

With thanks to Montgomeryshire BBKA and e-bees

Unwelcome Visitors to the Hive

by Dr Guy Morison

Entomology Department, North of Scotland College of Agriculture, Aberdeen.

From 'Scottish Beekeeper' Oct 1949.

Many different species of animals visit hives questing for food or shelter. Some of the visitors can establish themselves in a hive and breed in it. Naturally the well-built hive inhabited by a thriving colony of bees is likely to be less frequented by the smaller animals than the dilapidated hive, nevertheless the strong, new hive with a vigorous stock, often shelters more small visitors than the beekeeper suspects. Slugs such as Yellow Slug, The Dusky Arion, and The Black Slug creep about when the humidity is high, especially in the twilight and they are largely scavengers feeding on animal and vegetable matter. Like the snails, they lay eggs in damp earth and neither breeds in the hive. Slugs may be found living on the damp floorboard of a broken hive. They will feed amongst the dead bees and the debris of the hive. Sometimes The Garden Snail or other small species of snails hibernate in the shelter of the hive.

Spiders of various species (about 560 species occur in Britain) run over or enter hives. Some of the visitors hunt for their prey of small insects on which they pounce, others spin a web by which they rest until their prey is entangled. As far as I know British spiders will not

harm living bees and the Garden Spider will break its web to liberate an enmeshed bee. Not infrequently the eggs of spiders may be found in hives. Various species of small mites live and breed in the hives. They include some of the most common pests of flour, cheese and dry fruit. In the hive they feed on dead bees or pollen and if the food is plentiful and the humidity remains high the colony increases to large numbers of adult mites, eggs and immature stages. Almost invariably, with these mites will be found other, more active species that prey upon them and so help to keep a balance in nature. All these species are easily visible to the naked eye and each is larger than the mite of the acarine diseases. Woodlice or slaters live in damp, sheltered places and feed chiefly on vegetable matter. They will often

assemble and live near a hive set in vegetation and some may enter it at night. The earwig enters the hive for shelter and food which consists of plant tissue and small insects. It does not breed in the hive but immature specimens will moult off their old skins there and they and adults may pierce cappings, spoil sections and soil the place where they feed with excrement and food particles. Earwigs may

help to clean out pollen clogged combs. Cheshire recommended trapping them by placing over the quilts 2 unplanned boards shutting them between a bait of crushed fruit. A stud also separates the boards, which are removed from the hive and opened in a chicken run in daytime. The sex of an earwig is easily distinguished, the female has scissor-like and the male curved, calliper-like forceps. The female lays 20-50 eggs, which she tends very carefully until they hatch. The young stay with her for some weeks. When she dies they may eat her. A small tachinid fly parasitises and kills the earwig. Its puparium often occurs in hives tenanted by earwigs.

Booklice are small insects which may be found amongst quilts and packing. They feed probably on minute fungi and fragments of animal matter and seem harmless in the hive. Dragonflies have been recorded as predacious on bees abroad and almost certainly some of the larger species found in Britain will attack bees, but I have not seen them doing so, probably because they are scarce or absent from Aberdeen. Interesting and rather imaginative accounts of the visitation of hive by the Death's Head Hawk Moth are to be found in ancient literature. The moth is the largest British insect. It breeds in Britain, but it cannot survive our winter. However, a population is maintained by immigration from the European continent and in some years it has been quite large. The moth, pupae and caterpillar is each capable of squeaking and the note of the moth is supposed to resemble the 'piping of the queen'. The caterpillar feeds generally on potato leaves, the pupae rests in the soil and it is this stage that succumbs to our winter. The moth feeds on nectar and honey for which it will enter a hive.

I have only once found a moth in a hive. It would be interesting to experiment on the reactions of bees to moths of either sex. The caterpillars of the Greater Wax Moth destroy combs, clog space in the hive with their very tough cocoons and they often exterminate the colony of bees in countries warmer than Britain. The species is sometimes introduced with bee equipment to North East Scotland, where the cold climate prevents its rapid increase. The Lesser resembles in habits the Greater Wax Moth Being more tolerant of cold it is common in North East Scotland, nevertheless our frigid climate probably prevents it from becoming a serious pest. As in most other species of insects the quality and quantity of the food of the larvae determines the size of the adult insect. The Greater is usually much larger than the Lesser Moth, but a starved caterpillar of a Greater will develop into a moth that is smaller than the normal-sized Lesser Moth. Other species of small moths like the Clothes Moth and the House Moth of ten dwell in hives packed with cotton linen or woolen cloths, sacking or chaff. All run quickly and are prone to fly during warm evenings. The caterpillars feed on and damage various types of packing. The moths feed only on sugary liquids. They lay small whitish eggs which should not be confused with the masses of hard faecal pellets of the caterpillars.

Amongst beetle visitors should be mentioned the rove of beetles of which various small species enter to feed on debris and dead bees. A small reddish brown beetle, *Cryptophagus* may breed in hives with rather soiled packing. It harms neither bees or equipment, but the larvae of the small, round beetle, *Ptinus* will reduce dead bees to powder and may perforate quilts.

The Furniture beetle may damage the wood of hives. Its attack may be recognised from the small circular holes it makes at the surface of the wood. Oil Beetle larvae will almost certainly be carried to the hive by some foraging workers in the spring. These larvae wait in flowers for a visiting *Anthophora* Bee to which they cling. Each depends on being carried to the *Anthophora*'s nest where it drops off its carrier and completes its development at the expense of one of the bees progeny. However, the larvae often grabs the wrong species of insect. I have found those larvae in flowers of dandelion and catkins of willow. Unfortunately, I did not make a thorough inspection of hives in the vicinity at the time. Wasps can be the most annoying visitors and can rob out a weak stock in the summer. Some species nest in bushes, others underground. If the queen of certain species is able to enter and leave a hive when she desires, she may build her byke in the hive. Ants of various species visit hives. They can be annoying to the beekeeper and they may harm the colony. There are different methods of controlling them. The robbing honey bee is one of the most unwelcome of visitors. The causes for robbing are varied, and each case must be studied and controlled by the beekeeper. The Toad, Blue Tit, Coal Tit, Fly Catcher, Chaffinch, Sparrow, and Green Woodpecker, have been accused and convicted of loitering in the vicinity of hives for the purpose of eating bees or bee grubs. Both the house mouse and the field mouse may enter and nest in hives, empty or tenanted by bees. Inhabiting the nest of the mouse are various mites, small beetles and fleas. In fact a good way of collecting fleas and their larvae is to find a mouse nest in a hive.

With thanks to the Scottish BBKA and e-bees

Solar Wax Extracting

Peter Mathews Hertfordshire BKA

After a year or two of keeping bees you should be in a position of collecting a lot of surplus wax. Do not throw this away it is valuable! Most people render wax down to trade in against new foundation. This should provide you with more than enough, so that you will rarely need to buy in.

If nothing else you should get yourself a solar extractor. This is simply an insulated box in which you put spare wax; it sits in the sun, the wax melts and runs off into a suitable container. All the usual suppliers will have something in their catalogue, at a price. If treating this as a business proposition then you will be looking at a fairly lengthy payback time. On the other hand if your bees are highly productive and you are getting a good price for your honey, then you may see it as a good investment.

As solar extractors work well even if poorly manufactured, most people make their own. The main box is probably easiest made out of marine ply. Don't bother with fancy joints, just use strips of baton to screw the sides together. Just ensure exposed edge are well protected against the weather. The window should be doubled glazed for maximum efficiency, and the whole thing lined with insulation. This could be expanded foam, felt etc. But, 2" roofing insulation board is very easy to work with. The most difficult part is making the inner tray. Commercial units are made in stainless steel with welded joints. An old cooking oil container, made of tin plate, from your local take away is free and easily worked with tin snips and a soldering iron. Make sure all cut edges are folded back to avoid cutting yourself.

I am reminded by a winning entry at the National Honey Show by John Nailard of St Albans which he built out of material retrieved from skips. The body was a high density polystyrene packing box, the window was triple glazed polycarbonate sheet and the tray knocked up from an old oil drum.

You can go on to refine your wax and use it for candle making etc, which is worth more than a trade in. But, for now rough filtered wax will be very acceptable to KBS, Maisemore, Thornes etc. This little project should keep you quiet until the end of February!



Photo taken by Elizabeth Hatchell, Editor of Ludlow & District BKA Newsletter, which appeared in their December issue. Courtesy of E Bees

BEEKEEPING TERMS EXPLAINED

Thanks to Nottinghamshire BKA via e bees June 2010

BEE SPACE Discovered in the mid. 1800's and brought to the attention of the world by Langstroth. This is the distance 9mm between combs that the bees prefer to live and work. Any less and the bees try to fill the gap with wax or propolis, any more and the bees build brace comb to use up the space. This simple realisation made the movable frame hive possible and created modern beekeeping.

BRACE COMB Comb built by the bees in any available spaces within the hive. Modern hives are designed to minimise brace comb, which tends to fix parts of the hive together making it difficult to manipulate.

BROOD BOX A deep box without top or bottom in which the frames hang in a movable frame hive. This is where the queen lays and some stores are kept.

CELL One hexagonal unit in a comb. The worker bees build these from wax almost perfectly in complete darkness. The design of a cell is the perfect compromise of minimum weight to maximum strength and is admired by engineers the world over. The queen lays an egg in each cell, which is later capped with wax to allow the larvae to turn into a bee. Other cells are used to store honey and pollen.

COLONY The name given to a collection of bees either in the wild or in a hive. A healthy colony can contain up to 60,000 bees at the height of the summer. A collection of bees all flying together is called a swarm.

COMB The place where bees are born and stores are kept made up of hexagonal wax cells. Supported by a frame in modern hives. Cut comb is honey sold in block of comb straight from the hive.

DRONE A fertile male bee. He does little work in the hive and is thrown out of the hive in the autumn by the female workers. The queen will mate in the air with several drones that then die afterwards.

EXTRACTOR A machine driven by hand or motor which spins the frames of comb and throws out the honey by centrifugal force. This allows the beekeeper to put the empty frame back in the hive to be re-filled by the bees saving them a lot of extra work.

FRAME An open rectangle usually of wood into which a sheet of foundation is nailed. The bees use the foundation as a template to build their comb across the hive. The discovery of bee space in the mid 1800's made modern beekeeping possible as removable frames with exactly the right distance apart enabled the beekeeper to examine and manipulate the colony.

HIVE The home of the honeybee provided by the beekeeper. There are many different types of hive some examples are called skeps, Nationals or WBC's. Modern hives consist of a brood box, supers, movable frames. a floor, a roof, a crown board and a queen excluder.

HONEY Produced by the bees in the hive by concentrating nectar over and over again. It is stored in 'cells' to enable the bees to survive through winter without hibernating. The art of the beekeeper is to encourage their bees to produce a surplus of honey to extract.

HONEYBEE Bees are insects and belong to the 'superfamily' *Apoidea* and the order *Hymenoptera*. Various sub families of bees exist.

LIFT The sloping slats that make up the sides of the traditional WBC hive. Many lifts can be stacked up to cover and protect the brood box and supers inside.

MOVABLE FRAME HIVE Although tried by many inventors in many countries, Langstroth patented the movable frame hive in 1851. Opening from the top with ten frames it allowed the beekeeper for the first time, to remove, examine and reposition combs.

NATIONAL The name given to the most popular style of hobby hive in the U.K. The debate over a National Standard for frame and hive size continued for years with everyone having their own preference.

NECTAR A sweet liquid produced within certain flowers as an attraction to insects. This co-operation between plants and insects ensures the fertilisation of the flowers to produce seed. Bees concentrate the nectar in the hive to produce honey and store it in cells.

POLLEN Bees go from flower to flower gathering pollen and nectar as food. In doing so, some pollen is passed from one flower to another thus fertilising or pollinating the plant. This is a vital part of agriculture and we would have very little food or countryside without bees which perform around 95% of pollination in the U.K.

PROPOLIS This is a sticky brown filler or type of glue that bees collect to seal gaps in the hive. The main source is the sap of trees.

QUEEN The only fertile female in the hive the queen will lay up to 2000 eggs a day! After emerging from the queen cell a virgin queen will feed and get use to the hive. After around a week, she will fly from the hive to mate with several drones in the air. She will return to the hive never to leave unless the colony swarms. A queen can live up to five years but often exhaust her supply of fertile eggs within three years.

QUEEN EXCLUDER A metal grid placed between the brood box and super in a modern hive. The spaces are wide enough to allow workers to pass through with honey but are too narrow for the queen and drones to pass through.

SCOUT A worker bee that flies away from the colony or swarm to look for a new source of nectar or the site for a swarm to begin a new colony.

SKEP The traditional round hive made of straw or rushes. Few skeps are in use today as it is difficult to see between the combs built inside and attend to the bees. Skeps are still used to collect swarms by many beekeepers.

SMOKER A metal container with a spout operated by a hand bellows. If a whiff of smoke is blown into a hive, top and bottom, the bees instinctively sense that something is amiss and fill their stomachs with honey from the nearest cell in case they have to abandon the hive and start a new home. With full stomachs, they find it harder to position their abdomen and insert their sting, hopefully making them easier to handle. The beekeeper fills the smoker with dry grass, rotting wood or other vegetation. Corrugated paper is no longer used as it can contain toxic glues.

STORES Parts of the comb are filled with pollen and honey producing in effect a colonies larder. The pollen and honey is fed to the young bees, as it is high in protein and carbohydrate. The honey when eaten by the bees gives them energy. Honeybees do not hibernate: they have evolved to survive the winter by storing surplus honey and pollen in the combs to eat during the cold weather.

SUPER A shallow box without a top or bottom in which the frames of comb hang in a movable frame hive. A queen excluder prevents the queen from getting into the box yet allowing the worker bees to store honey in the comb. This is where the beekeeper finds the surplus honey to remove from the comb with an extractor.

SWARM The way bee colonies multiply; when a hive becomes too crowded the bees will build queen cells. Soon after these cells are sealed, up to half the bees will leave the hive with the queen as a swarm. After settling nearby, scouts will seek a new home and the swarm will fly off to settle in the site they consider most appropriate. In the original colony, the first queen to emerge could either destroy any queens still waiting to hatch or leave the hive with up to half of the remaining bees as a caste. As further queens hatch, this may result in further caste, denuding the colony of even more bees.

VARROA DESTRUCTOR A parasitic mite which lives on bee larvae and adult bees. Introduced into Britain from Europe in the 1980's it is at present impossible to destroy completely. Were it not for dedicated beekeepers, bees in the U.K. would have eventually died out before they could become resistant to the mite with catastrophic results for the pollination of crops.

WAX Produced in small plates by bees from glands along their abdomens. These thin oval plates are chewed by the bees to soften them and then form the wax into comb

WORKER A sterile female be that performs all the functions necessary in the hive. All honeybees seen flying around flowers will be workers.

BREAKTHROUGH IN FIGHT TO SAVE BRITAIN'S BEES



Honeybee populations have fallen by 23 per cent since 1992
Thursday December 23, 2010

By John Ingham, Environment Editor. Daily Express

BRITAIN'S bees were yesterday given a lifeline against their biggest threat – a tiny killer mite. British scientists said they have found a way to make the Varroa mite “self-destruct” – without using pesticides.

They have worked out how to get the mite effectively to destroy itself by interfering with its genes and “silencing” natural functions. The Varroa mite has blighted bee populations worldwide in recent decades, attaching itself to the insects, drinking their blood, injecting viruses and weakening their immune systems.

It is particularly deadly in winter as it strikes when bee numbers are depleted.

The mite is particularly difficult to fight because it has developed resistance to pesticides. The research was given a cautious welcome yesterday by British Beekeepers' Association chairman Martin Smith, who said: “While this research is at a very early stage we are pleased that work is being undertaken to try to control the Varroa mite which remains the largest threat to beekeeping in this country.”

Honeybee populations have fallen by 23 per cent since 1992, largely due to the mite.

Scientists from the Government's National Bee Unit and Aberdeen University have now used a Nobel-prize winning technology – known as RNA interference – which controls the flow of genetic information. So far the “silencing” has worked with a neutral Varroa gene, which has no significant effect on the mite.

But the scientists now plan to target a gene that could force the Varroa to self destruct. Aberdeen University's Dr Alan Bowman said: “The beauty of this approach is that it is really specific.”

Dr Giles Budge from the NBU said the treatment could be available in as little as five years. He said: “This cutting edge treatment is environmentally-friendly and poses no threat to the bees.”

Environment Minister Lord Henley said: “Bees are essential to putting food on our table and worth £200million to Britain every year through pollinating our crops. This excellent work by UK scientists will keep our hives healthy and bees buzzing.”

A pesticide which could be a threat to bees should be banned, conservationists said yesterday. They spoke out after a leaked memo from US government scientists revealed clothianidin, used in UK agriculture, was extremely harmful to the insects.

Sleep deprived honeybees are sloppy dancers - By Mark Brown

Just like humans, sleepy bees suffer at work. For us, a snooze deprived worker can't concentrate or perform tasks efficiently, but for honey bees a lack of sleep leads to mistakes in a wagging dance they perform. Bees do in fact sleep, contrary to popular belief, and exhibit very similar characteristics to humans when napping. They relax their muscles, their body temperature drops, and they won't move around or react to stimuli very readily. Plus, as this study from the University of Austin, Texas reveals, taking forty winks is very important for bees to get enough energy to perform their daily routines. Researchers kept some bees up throughout the night, while a control group had a snooze. In the morning, the sleep deprived honeybees weren't as able to communicate as well with their fellow insects. Bees use interpretive dance to point out nectar-filled flowers to other bees, wagging their fuzzy bods in the direction of the food source. But the tired bees had less precise jigs and made more mistakes than their well rested compatriots, which would lead to fewer followers making it to food in the real world. So how does a scientist go about keeping hundreds of honey bees up? Late night horror movies? Caffeine? Nope, instead the researchers attach a little metal backpack to each honey bee, and then a wall of magnets passes across the bees. This contraption, called the "insomniator" jostles the insects awake, at different points throughout the night. Not too pleasant an experience, we imagine. This is, perhaps unsurprisingly, the first ever study of sleep deprivation in bees.

The research is reported in the journal Proceedings of the National Academy of Sciences.

Bees' tiny brains beat computers

From December 2010 issue of North Staffordshire BKA's Newsletter, courtesy of eBees
Found in the Guardian Newspaper and via guardian.co.uk by *Ana Mawby*

Researchers found that bees could solve the 'travelling salesman's' shortest route problem, despite having a brain the size of a grass seed.

Bees can solve complex mathematical problems which keep computers busy for days, research has shown. The insects learn to fly the shortest route between flowers discovered in random order, effectively solving the "travelling salesman problem", said scientists at Royal Holloway, University of London.

The conundrum involves finding the shortest route that allows a travelling salesman to call at all the locations he has to visit. Computers solve the problem by comparing the length of all possible routes and choosing the one that is shortest.

Dr Nigel Raine, from Royal Holloway's school of biological sciences, said: "Foraging bees solve travelling salesman problems every day. They visit flowers at multiple locations and, because bees use lots of energy to fly, they find a route which keeps flying to a minimum."

Using computer-controlled artificial flowers to test bee behaviour, he wanted to know whether the insects would follow a simple route defined by the order in which they found the flowers, or look for the shortest route. After exploring the location of the flowers, the bees quickly learned to fly the best route for saving time and energy.

The research, due to appear this week in the journal *The American Naturalist*, has implications for the human world. Modern living depends on networks such as traffic flows, internet information and business supply chains.

"Despite their tiny brains bees are capable of extraordinary feats of behaviour," said Raine. "We need to understand how they can solve the travelling salesman problem without a computer."

Capital Bee scheme criticised by Beekeepers

A bid to boost beekeeping in London by mayor Boris Johnson has come under fire from beekeeping associations, who say the capital is already saturated with inexperienced beekeepers. Johnson's Capital Bee campaign, which will offer up to 50 community food-growing groups the chance to keep bees, hopes to boost beekeeper numbers in the city and halt the decline in bee populations. But London Beekeepers' Associations accuse him of "jumping on the bandwagon" of the huge growth in the popularity of beekeeping.

John Chapple, chair of the London Beekeepers' Association, which has seen a five-fold increase to 150 members in the past few years, said: "London is already saturated with beekeepers. We don't need any more, what we need are better beekeepers." John Hauxwell, chair of North London Beekeepers' Association, fears that Capital Bee will increase demand even further: "All new beekeepers will want to join an association and we will be left to carry the can to support and mentor them. We are already overloaded with inexperienced beekeepers in London and don't not have enough experienced members with the time to support and mentor newcomers," he said. Hauxwell's north London group also has 150 beekeepers, and has seen such rapid growth that it closed its books to new members last summer.

He added: "Londoners who want to help bees would do better planting bee friendly trees and flowers and lobbying for a more bee-friendly city, rather than keeping them. Rather than jumping on the beekeeping bandwagon, Boris should stop parks from planting double-headed flowers that provide no nectar or pollen, cutting back trees and shrubs that provide vital forage for bees, and spraying with chemicals." The British Beekeepers' Association welcomed the initiative and called on associations to raise standards. "We have produced a training kit to help them educate new and existing beekeepers" said Tim Lovett, BBKA director of public affairs. "If existing associations are saying they have reached capacity, new ones will have to be set up."

Pamela Brunton from the food charity Sustain, which is managing the Capital Bee campaign for the Mayor, said: "There has been no research into how much forage different pollinators need, so it's impossible to say how many hives London can support. In fact, urban environments have been shown to be very good for bees because of the year-round, diverse forage available to them in our parks and gardens. We are responding to the demands of the people of London, many of whom have requested beekeeping equipment for their food growing sites as part of their applications to Capital Growth," she added. "We recognise that beekeeping is a big responsibility, and wanted to have a way of monitoring the hives and bees we give out and make sure communities got the training and support we know they need. We are keen to work with bee associations and have been in dialogue with them."

With thanks to Shropshire BKA and e-bees

FEEDING BEES

I came across this interesting article written by our most senior and highly qualified member in the post-war era. As it was written some 60 years ago I sent a copy to Dr J.M.Cooper, Head of Food Science at British Sugar plc, who wrote a very interesting article in the February issue of BBKA News on Honey, Sugar and Bees. He confirmed that the points made by Alf Hebden are still as true today as when written. John Annett, The Apiarist, newsletter of Harrogate & Ripon Bee-keepers Association, via e BEES.

There is an increasing tendency these days to make this as easy as possible. There are advocates for feeding candy instead of sugar syrup. This is accentuated by the fact that commercial sugar candy fondants are fairly easy to come by and are fairly easy to give to the bees. Warnings about this have been given before but I think they should be emphasised. First of all it should be made clear that any form of candy which is given to bees for storage purposes gives the bees work which they otherwise would not have to do. Bees are in the habit of collecting nectar which is a dilute solution of sugar. They continue this habit when they are given candy upon which to feed, and they immediately dilute this candy from their own body water content until they succeed in reducing the sugar content of the candy from about 82% (at least) to something around 40%. They then evaporate the surplus water until they have a sugar solution which approximates to 80% and then they store it. This is useless work. The faultiness of this method of feeding is accentuated if it is realised that these same bees have to fly from the hive in search of water in order to make good their body water losses. It would have been easier to have given them a concentrated liquid sugar solution in the first place, which they could have stored with far less effort and with no necessity for the bees to leave the hive in search of water. A similar criticism can be applied to the feeding of dry sugar. Water has to be collected to replace that which has been lost in converting the sugar into a sugar solution of 40%. Work is then demanded of the bees to concentrate this to a solution of approximately 80% before it can be stored. Furthermore, any grains of sugar which are too large for the bees to handle are thrown out of the hive entrance and are wasted. Feeding dry sugar is therefore a treibly wasteful

method of autumn feeding although it may well be a very satisfactory method of maintaining a starving colony during spring and summer and is also useful in establishing a swarm on new comb. It is all really a matter of applying commonsense and of not being too easily misled by what one reads or hears. There is another point of importance. Invert sugar candies, such as one can buy commercially, are produced by the acid-hydrolysis of sucrose (everyday sugar as we buy it in the shops). Some of them are made using the mineral acid, hydrochloric acid. Others are produced with the help of the organic acid, tartaric acid. As far as bees are concerned there seems to be no distinction between the two. Both are equally harmful to bee life if they are fed to them in the absence of any other form of food and for a continuous period. Invert sugar candies shorten bee life by about two-thirds and produce dysentery in the process when they are fed alone, and this seems to apply to all makes irrespective of whether mineral or organic acid was used in the manufacture. It seems wiser, therefore, only to use these candies in an emergency and not as a staple diet. If a colony of bees is starving to death, candy may keep them alive. If the bees have to rely upon such candy for much more than a week they are likely to be in trouble. The best food for bees is nectar produced by flowers which the bees are equipped to handle at all times. They can consume it or store it at their pleasure. Failing this, they should be fed sucrose, which is everyday sugar, obtainable from the corner shop. During spring and summer this can be given to them as a 40% solution (one pound of sugar in one pint of water) and in autumn as an 80% solution (two pounds of sugar in one pint of water). This is the advice given in every textbook on beekeeping and is still sound counsel. The bees can handle these solutions to suit their needs with the minimum of work and no risk only add that solutions of the darkest kinds of unrefined sugars such as molasses, treacle or golden syrup are lethal to bees and they cannot

survive for long if they are fed on them alone. And, although I cannot see anybody doing it, bees will be damaged if they are fed on their own honey if it has been over-heated and then fed back to them. We hear a great deal of talk these days about human beings being better for living on natural unadulterated foods. Bees are just the same. Ever since I have kept them I have been convinced that they ought to be allowed to live on honey all the time and that they should be fed sugar only in an emergency or when they could not gather sufficient honey for their survival. I

have never had any sympathy at all with the view that bees could be robbed of honey which they needed (because it could be sold at so much per pound) and that this could be replaced with sugar (at much less per pound). It looks as though this viewpoint is now being substantiated after investigation into the value of feeding various sugar compounds and that our ancestral beekeepers have been right all the time. To be fair, though, it could have been the other way.

With thanks to Alfred Hebden N.D.B. Via Harrogate & Ripon

A step forward or back?

A recent piece in the BBKA news, "Old comb versus new comb" has triggered me into sharing some of my thoughts on comb. My background is in deep level mining and in that environment one learns quickly to accept nothing at face value. It seems as though this may be the reason why I've become cynical about much of the equipment that is currently hawked to the 21st century bee keeper. There appears to be plenty of evidence to suggest that current pesticide and varroacide practices lead to an unhealthy build up of unnatural substances in beeswax. Therefore, I find it entirely logical that brood comb should be regularly removed. The question is what to replace it with. The policy of recycling wax in foundation must compound the issue of contaminant build up. I also feel that the uniform pattern of foundation is an unnatural demand to enforce on our bees. Bees draw worker cells of differing sizes when allowed to. They are also happy to expend valuable resources on producing a much larger ratio of drones, than foundation framed bee keeping allows.

Although the reasons for this are not yet understood I am sure that after 120 million years the bees have very good reason to do so. My other aversion to foundation is the size of the embossed pattern. A well known supplier is currently selling foundation with a cell width of 5.7 mm. I transferred

a nucleus of bees from such foundation into a top bar hive this summer. The cell size in this hive has already regressed to an average worker cell size of 5.3 mm. Others have reported cell size variation as small as 4.8 mm. The

imposed larger cell size is not only unnatural, but also has an impact on the laying space available to the queen, reducing it by as much as 35% and potentially leading to increased swarming. I would prefer my bees to have clean wax and a cell size and drone ratio of their choosing. This may well reduce my honey harvest, but I am sure the bees will be far healthier and contented. I find horizontal top bar hives time consuming in terms of returning the bars after inspection without any "fatals" and also the large lugs are cumbersome, so I decided to experiment on a National hive. In deciding to dispense with the foundation I found that, with sensible frame handling, I no longer needed wire or fishing line support within a frame. Dispensing with wire then allowed me to dispense with expensive and overcomplicated frames, as no allowance is needed for wire expansion at the bottom of the frame. I placed a narrow cedar top bar on one side of the brood nest and a frame of foundation on

the other. The bees drew a perfect rectangular comb, which I could easily remove, and ignored the foundation. I repeated the process by introducing another cedar bar on the other side of the brood nest and again the bees showed their preference over the foundation. Although I found no issue with comb being attached to the side of the brood box, I think this was luck and so in the new year I will use a simple top bar with 10 cm short sides. This will give me combs which can still be easily examined, enable vibration communication, are drawn as the bees desire and are a lot cheaper! I intend to have a simple framed hive next to a traditional framed hive at several

apiaries and look forward to reporting on results in terms of bee health, Varroa numbers, cell size and honey

produced. The next steps will be to assess appropriate frame spacing and also produce drone foundation for the supers, from the fresh wax I have recovered this year. Please note that these are my own personal views. I would welcome any thoughts.

Matt Pitt, Editor, AN HES 'the swarm' December 2010 - the newsletter of the West Cornwall BKA via e BEES

How Do You Keep Your Bees? - Part I

Introduction

The most important part of any honey bee colony is that beneath the queen excluder. The boxes that make up this part of the hive contain the brood-nest; it is where the queen lays and new bees are produced and is the powerhouse of the hive. All the important management is directed towards this part of the hive and, as far as the welfare of the colony is concerned, the honey supers are largely irrelevant. The bees will be happy with almost any space in which to store honey and it is only important to the beekeeper that it is stored in an organised way so that combs can be easily removed for extraction and returned intact next season. Beekeeping books offer differing advice on the size and/or number of boxes that should be used to hold the brood-nest and beekeepers are often confused about which to use. Over the years we have tried all feasible combinations with the Modified National hive and have come to a conclusion as to which configuration is generally most suited to our bees and our style of beekeeping. It is not my intention to tell you which is best for you and the aim of this article is to examine the pros and cons (as I see them) so that you can make up your own mind. I will be delighted if this article stimulates discussion and hopefully this will find its way onto the pages of Welsh Beekeeper so that we can all learn something.

Factors which Determine the Choice of Hive Configuration

Size of the Brood Area

This should be related to how prolific (fecund) the type of bee you keep is, i.e. the size of colony the queen is capable of producing when she is at the peak of her laying during the season. If the brood area you provide is too small it will limit the size of the colony and encourage swarming. If the brood area is too large, some (or perhaps a lot) of your potential honey crop will end up being stored below the queen excluder and it is preferable not to have to extract honey from combs that have previously held brood. The following table shows the area of comb per frame (two sides) provided by the three British Standard frame sizes; shallow, deep and extra deep.

Area of comb Relative Area Ratio (cm²/frame, both sides) (standard deep=1)

Shallow frame 383 0.60

Deep frame 638 1.00

Extra deep frame (12" x 14") 934 1.46

These figures can be multiplied by the number of frames/box (12 in the case of Hoffmann frames or 11 with end spacers) but ratios remain constant. Remember a WBC hive has 1 less frame/box.

A Home for All Seasons

Most emphasis is usually placed on the space requirements of the brood-nest during spring and summer but the part of the hive below the queen excluder is where the colony also has to over-winter. If you consider the whole year, the bees spend the majority of their time (usually about 8 months out of the 12) in the brood part of the hive and this is an important consideration which is discussed, at more length below, in relation to over-wintering.

Management Options and Flexibility

Multiple box configurations give greater management flexibility. It is possible to adjust the height of the brood nest by swapping the position of boxes so that the brood-nest extends right up to the queen excluder – where it should be. When in late spring or early summer stores, instead of brood, start to accumulate in the upper box this is the time to swap the boxes around. Bees do not like stores below the brood-nest and they are quickly removed and re-stored above the queen excluder leaving room for the queen to extend the nest downwards. During heavy nectar flows bees naturally deposit nectar close to the hive entrance at the bottom of the hive but this is only a temporary measure. They quickly transfer it to a higher location (sometimes overnight) above the brood nest so, by swapping the boxes, the beekeeper is simply making use of a normal behaviour. To speed the process of removal, capped stores can be opened with an uncapping fork.

The downside of multiple boxes is that there are more frames to look at each time you do a hive inspection – but they are lighter and smaller in area. Multiple boxes and frames also cost more! When it comes to finding the queen you might think that fewer frames would make the task easier but my experience is that smaller frames can be scrutinised more efficiently for a queen who is likely to be a moving target. When searching in earnest for the queen in a two-box hive, the first action should always be to separate the boxes so that the queen can not play hide-and seek between them.

Another advantage of a two-box system arises when the beekeeper is checking for the presence of queen cells – is the colony setting-up to swarm? Queen cells are almost invariably produced on the bottom bars of the upper box and, if no other management is required, a swarm check can be accomplished by simply lifting one side of the upper box so that the bottom bars can be viewed. A whiff of smoke can be used to drive the bees away and the start of any queen cells can easily be seen. If anything suspicious is seen then this requires proper frame-by-frame inspection. If the colony is preparing to swarm there will almost certainly be queen cells in other positions on the combs but it is very rare for there to be none on the bottom bars. So this method of checking is pretty reliable but not quite 100%.

Alternative Hive Configurations

There are four possible configurations for the brood-nest with the Modified National Hive (see page 11):-

- (1) A single deep box
- (2) Double deep box (2 deep boxes)
- (3) A single extra deep box – the so called 12x14 box (a possible alternative is the Commercial box)
- (4) The combination of 1 deep and 1 shallow box – usually referred to as brood and a half—and this obviously has two possible arrangements.

Single Deep Box (space units = 1.00)

There are many advocates of this size of brood nest and it is said to provide adequate space for colonies of the native Northern Dark bee (*Apis mellifera mellifera*). Using this configuration, every one of the 11-12 frames must pull its weight (be available for the queen to lay in) - right out to the hive wall. Frames containing more than small amounts of stores, and particularly those clogged with long-term stored pollen (a favourite habit of the native type of bee), need to be kept under rigorous control if the colony is to achieve its full potential and not swarm. The management options are limited compared with multiple boxes but the availability of standard nucleus boxes enables pre-emptive splits to be made.

Double Deep Boxes (Double Brood, space units = 2.00)

This configuration is only applicable to the more prolific colonies which, unless you keep bees with Italian blood in them, are few and far between in my experience –but they do occur occasionally on Anglesey. Native type bees simply can not use this amount of space for brood even at their peak. The bees will be quite happy with the extra space you have afforded them but will inevitably store a lot of honey around the brood nest - so the beekeeper may not be as happy!

Single Extra Deep (12x14, space units = 1.46)

One of the criticisms of the National hive that often appears in beekeeping books is that the standard deep box is too small and I presume this is what led to the production of an extra deep version. This option seems to be about the right size for many colonies of native type bee. Dummy boards can be used to adjust the brood area to suit the particular colony. The bees seem to love the large uninterrupted combs (no silly gap between box spaces) and they seem to over-winter particularly well in a single large box. The downside of this configuration is that management options are rather limited; it is difficult to adjust the height of the brood-nest and it is all too easy for the colony to constrict the brood-nest by surrounding it with combs of stores (honey and pollen). This is just what the bees themselves want and, having achieved this condition, it is a sign to them that they are in a condition to swarm. Swarm prevention by splitting colonies is also difficult unless you have extra deep boxes available. Even then the outcome tends to be rather 'severe', in the sense that, in such large boxes, you have to make ,close to an equal split and end up with two moderate sized colonies (neither of which is likely to produce a large honey crop) instead of one large and one small. Extra deep nucleus boxes would solve this problem but they are not an every-day item of equipment.

One Deep and One Shallow Box (Brood and a Half, space units = 1.60)

Size-wise this is slightly larger than the extra deep option and not all colonies can totally utilise the space this configuration provides. But because there are more management options – moving boxes and frames about – this does not really matter and it is easy to prevent large scale storage of honey below the queen excluder until late on in the season. Management can easily be adjusted to allow the colony to achieve its natural size without placing any space restriction on it.

With thanks to Wally Shaw, Welsh BKA

There are four possible configurations for the brood-nest with the Modified National Hive (see below

Alternative Hive Configurations

1. Single Deep Box

2. Double Deep Boxes

2. Double Deep Boxes

3. Single Extra Deep Box (12x14)

4. One Deep & One Shallow Box - (brood-and-a-half)

BEEES THAT RESIST MITES ARE BUSY GROOMERS

We're not the only ones to brush off an annoying mosquito or other buggy pest. Honeybees, when plagued by tiny tracheal mites, will use their legs like a fine-tooth comb to rid themselves of the life threatening parasites. But, as entomologists found out, some honeybees groom themselves more fastidiously than others. For the first time, bee researchers Robert Danka and Jose Villa, provoked grooming responses in honeybees by placing tracheal mites directly onto individual bees. Tracheal mites invade the breathing tubes, or airways, of adult honeybees—eventually harming or killing the important pollen carriers. The scientists, who work in the Honey Bee Breeding, Genetics, and Physiology Research Unit at Baton Rouge, Louisiana, wanted to compare how a line of genetically resistant bees groomed when faced with tracheal mites—in contrast to the reactions of a line of susceptible bees. While grooming has been considered the primary means by which resistant bee populations are able to fend off damaging infestations of tracheal mites, it hasn't been clear exactly how genetically resistant bees' hygiene habits differ from those of other bees. So they studied 500 honeybees—resistant and susceptible—watching how each reacted to the arrival of an adult female mite on its thorax. They gently transferred each minuscule mite to the host bee via the most delicate instrument available: an eyelash mounted to a small stick. The bees were housed in a glass-walled observation hive. "The mites are most vulnerable when they're moving around on a bee," says Danka. "Small and soft, they can't survive for long, except for inside the bee's breathing tubes." The researchers closely monitored each test bee's grooming behaviour for seven minutes. Resistant bees appear to be more sensitive in terms of their ability to detect and respond to parasitic mites on their bodies. "More resistant bees groomed than susceptible bees," says Danka. "Resistant bees also groomed themselves more often on the side with the mite, and they groomed more persistently." But the study also seemed to show that the resistant bees' tenacious grooming didn't necessarily result in fewer mites. Danka explains why this might be a hasty conclusion though. "We just took a brief, seven minute snapshot within the first few days of a young bee's life," he says. "In a real colony, potential bee hosts may be challenged by many more mites over a much longer time, and so more-persistent grooming would likely have a greater impact."

With thanks to Nottinghamshire Beekeepers' Association and e-bees

DISEASES OF BEEKEEPERS Montgomeryshire BKA

It occurs to me that whilst we are bombarded with information and advice on diseases of bees (which is all very well and proper) there seems to be an alarming lack of knowledge concerning diseases of beekeepers and I consider it to be high time this deficiency was addressed. Now it is known that BSE in cattle may lead to CJD in humans, it behoves us to consider that such ailments may be and possibly may have already been transmitted to humanity via its livestock. One of the most serious of bee diseases is, of course, ACARINE or ISLE OF WIGHT DISEASE and the corresponding ailment among beekeepers is APIATHY or I'M ALRIGHT DISEASE. The symptoms create an inability to take heed or warnings of impending danger, followed by a total failure to do anything about it when it arrives. It is almost inevitably followed by the human equivalent of FOUL BROOD - to wit, FOUL MOOD characterised by a tendency to plead being allergic to bee venom as a face-saving way of throwing in the towel. Then there is AMOEBA, the beekeeping variety of which is I'M EAGER, a common affliction of novices who just can't wait to get stuck into beekeeping and make all sorts of errors such as buying different types of hive to find which type suits them best, only to discover that they are unable to transfer frames. This can lead to the illness opposed to SACBROOD which is BLACK MOOD, an ailment which can also be developed from the alternative to NOSEMA which in the beekeepers' case is spelt NO SEE MA, a variation of CLOUDY WING VIRUS, or, in this case CLOUDY EYE VIRUS - resulting in a complete inability to ever spot the queen. KASHMIR VIRUS has its correlation in CASH FEAR VIRUS a dreadful condition of Association members when they see the Treasurer approaching with a list of overdue subscriptions in hand closely followed by the Raffle Secretary with that predatory look in his eye. In extreme cases it becomes as contagious as to affect the Treasurer too, resulting in palpitations when called upon to present and justify the accounts at the AGM. It's a horrible sight, only to be equalled at the same function by the rictus of BEEKEEPERS' PARALYSIS VIRUS which smites the entire membership when it reaches the item on the Agenda "Election of Officers". Well I think that's enough to be getting on with, except to observe that knowing every one of us to have been hit by one or the other of these ills at one time or another and yet continue to keep bees, it can only be assumed that we are all afflicted with possibly the worst malaise of all - APIMANIA. This is a malady which can probably be diagnosed only by a bee-opsy and in any case it's doubtful that a cure exists.

FEBRUARY IN THE APIARY

February is often a dreary month, but it is the last month of Winter and soon Spring will be on its way. Bees tempted out on sunny days will start to find a few flowers, but beware, because February is a treacherous month and one of the worst for colony deaths. One of the reasons for this is that the queens are now laying, and that means that brood is present in the hives. Winter stores start to decline rapidly as more food is used to produce heat to keep the brood area warm and to feed the extra mouths arriving on a daily basis. The second reason for the demise of colonies is premature deaths of winter bees: these bees have survived since the end of last season and are needed to kick-start the colony this Spring, but, if they are not healthy, many will die early and the colony may collapse as a result. Shortage of food can be remedied by feeding fondant to any colonies needing it. Hefting the hives (lifting each side of the hive a little off the hive-stand) can indicate those that are light. If they come up with little effort, give them some food. If you struggle, they are probably safe. Only you will know how much food each hive took last Autumn. A hive with 35 – 40lb of stores as it went into the Winter, should have sufficient to last until flowers become plentiful again. It is much too early to disturb colonies so external assessment coupled with a knowledge of previous care has to suffice. If you decide that you need to feed, fondant can be made at home or purchased from the suppliers or from local companies. Put it directly over the feed hole in the crown board or even over the frames themselves and cover it over with plastic or foil to prevent it drying out. Once this type of feeding has started, it will need to be continued until the warmer weather starts. I find that over wintered nuclei usually need this type of supplementary feeding as it is impossible to get sufficient food into them in the Autumn, due to a shortage of space. Knowing what you did last year is very important at this time of year and this brings me on to records. Whether you have just started beekeeping and own one hive, or have been managing hundreds of colonies since Adam was a lad, records are essential. Now is a good time to get them organised. They do two things: Enable you to know what you, and your colony, are doing week by week. Allow you to plan from year to year so that mistakes are a part of learning and not repeated annually. There is information available from many sources, including a leaflet which is produced by BBKA, and can be downloaded from their website at britishbee.org.uk but the important point to remember about records is that they are a personal matter. Devise your own to include those facts which are important to you. Most beekeepers use a column system so that only a tick, a letter or a number is needed when the record is filled in. Do not make it too complicated or you will soon give up. As an example, most beekeepers will want to record whether the queen is present and laying, so a column headed queen, or simply, Q, will be needed. Then in this column will be a tick if she is seen or 'e' if she is not seen but eggs are present. Similarly there will be a column QC (Queen Cells). In this can be recorded the stage of development: 'e' for eggs, 'u/s' for unsealed larva and 's' for sealed. Decide how many columns are needed. Do you want to know how many frames of brood are present? This is very useful for the novice particularly as it helps to plot the development of the colony, but the old hand may feel it is unnecessary. We find a column for 'needs at next inspection' is handy and prompts us to have the right equipment ready. It is usually necessary to have an extra column for notes and, at the top of the sheet, should be space for the hive number and details of the queen, age, colour mark and so on. What form your records take is, again, a matter of personal preference, but I strongly feel that, when you leave the apiary, the records should go with you. Ours are produced on normal paper on the computer each year, separate sheets for each hive and kept in a loose leaf file. Leaving them under the hive roof is not an option. So plenty to think about to enable you to leap into action next month when the season starts.

Celia F Davis War-

wickshire Beekeeper



'Fondant on a nucleus hive in February

Feral Bees Invade Bat Roost

Andrew Perry

From 'The Apiarist, Harrogate and Ripon Bee-keepers Association November 2010 editor Judith Rowbottom, courtesy of EBees.

I was recently faced with a problem that I thought you may find interesting. As well as being a bee-keeper and member of the HRBKA, I am a Natural England Volunteer Bat Warden (NE is the statutory body that oversees wildlife legislation in England). We provide a free, friendly service, on behalf of NE, to encourage home owners to seek proper advice regarding bats with the aim of preserving the very many bat roosts found in homes.

To do this we:

1: Reassure owners that bat roosts often cause little or no inconvenience to the owner.

2: Explain the legislation regarding bats (it is illegal to kill, injure or disturb bats or to damage a bat roost (roosts are protected whether bats are present or not)).

3: Offer advice on how bats and home owners can happily co-exist and on how works, which may impact a roost, can go ahead legally, ensuring bat roosts are not damaged. Our advice is formalised by NE in a letter to the home owner and this letter allows otherwise illegal actions (with regards to bats roosts) to go ahead legally.

OK so now to the problem. I was called out to a house with a long standing and much loved bat roost in a porch immediately above the front door. The bats had vacated the roost in late August (perfectly normal) and a colony of feral honeybees had moved into the roost in early September. The bees not only pose a risk to the bat roost (by potentially filling it with comb), but are an unwelcome nuisance to the home owner and a potential safety hazard (the postman has refused to deliver letters). My initial thought was simply to advise insecticide application in October, when bats are not present, using an insecticide recommended by NE for use in bat roosts. However, an association member advised me that the dead colony may be robbed by a managed colony, who would in turn take the poison back to their hive, killing them. Therefore thinking that the eradication of feral bee colonies, where the use of chemical insecticides was undesirable, would be a pretty common activity I sought some advice and got far more than I bargained for.

National Bee Unit view

The NBU advised me that the eradicated feral colony is likely to be robbed but knew of no other way to guarantee eradication other than the application of insecticides (NBU use C02 but this takes considerable expertise and is not usually available to the general public). Their view is:

1: There is a high likelihood that an eradicated feral colony will have its stores robbed.

2: Insecticides present in the eradicated feral colony will present a real danger to managed colonies as they may be taken back to the robbers hive.

3: If insecticides are used, robbing should be averted by:

A: Removing the honey and comb from the eradicated colony or

B: Sealing up the entrance of the eradicated colony permanently.

A bee-keeper's view

Next I spoke to a prominent member of the HRBKA who, although in agreement with NBU, was somewhat more sympathetic to the bats and suggested the following possible solutions:

1: The bees could be prevented from re-entry by way of a temporary one way escape and the returning bees either:

A: killed by the home owner as they clustered outside by spraying water and washing up liquid over them (admittedly unpleasant).

B: encouraged to re-house themselves by moving into a small nucleus hive placed near the entrance (containing bees /queen).

Pest Control Officer

On the advice of the bee-keeper, I then called a pest control officer (PCO), and member of HRBKA. He informed me that the insecticide typically used is Ficam D (authorised by NE for use in bat roosts). However, application would cause a legal conflict of interest for any PCO because:

1: It could only be applied to a bat roost if a licence from NE stated this was legal.

2: PCOs are legally obliged to adhere to the application instructions of any chemical.

The instructions for Ficam D state "Action should be taken to prevent foraging bees gaining access to treated bees nests, preferably by removing the combs or blocking the nest entrance".

Natural England's view

I also called the local Wildlife Licensing Officer at NE. She knew of no other similar case this and promised to "send round an email" to her colleagues to see if they knew of a precedent and get back to me. So far she hasn't. So in summary, the options are:

1: Do nothing and hope the bees go away or do not survive the winter.

The house owner is not only very attached to the bat roost; the bees are causing a nuisance and may potentially be a health and safety concern.

The colony may not survive the winter; however, it will be a shame if the bees destroy the bat roost by filling it with comb before they perish.

5: Install a temporary one way bee escape to exclude the bees and either 1: kill the excluded bees as they cluster outside or 2: place a small nucleus hive close by to encourage the excluded bees to re locate. Option 1 is an unpleasant and potentially dangerous job with perhaps large numbers of agitated excluded bees flying around the porch. Option 2 would involve somehow location a small nucleus in the porch very close to the bat roost entrance. I am not sure if this would have been practical or desirable to the home owner.

Outcome

Before I could put Option 5 to the home owner I was struck down with an extremely painful tooth infection and was unable to contact the home-owner for a week or so. In the mean time he had ensured no bats were present in the roost (by surveying the exit in the evenings) and blocked the entrance temporarily with a soft cloth and hung a commercially available insect repellent (citronella or something similar) in a tin just below the hole. He assured me this was working with a noticeable reduction of the number of bees in the porch. Although unpleasant for the bees it does not involve the application of pesticides and therefore presents no danger to nearby managed hives, and the legal snooker faced by a PCO is avoided.

I informed the home owner that I agreed with this approach but the cloth *must* be removed in February 2011 at the latest to allow bats back next year and informed him that even if this is successful in eradicating the bee colony the honey and comb still present may act as a lure encouraging other swarms to take up residence in the porch in future. After about 3 weeks (in late October) NE finally issued their letter, they don't agree!! They consider the temporary blocking of the roost illegal. NE has the final say and if the home owner wants to treat the bees with insecticide may have to dismantle his porch roof under a development licence after all! The cost of a consultant and for the work is not likely to be cheap and as you can imagine NE's response has not gone down. However, the bees do seem to have gone (until next year???) and the home owner may be lucky in this case. I find it hard to believe that this is an isolated case and although this home owner was very sympathetic to the plight of bees this has caused him problems, and may yet be a very costly to him. I think many people faced with a bee colony above the front door would have administered insecticides without any consideration to nearby managed bee colonies. If any readers are aware of a method of eradicating / moving unwanted feral bee colonies from inaccessible places without the use of highly toxic insecticides, or know of any similar situations or solutions, I would be very interested indeed.

In my opinion the bats will move out as soon as the bees arrive, therefore leaving only the problem of the bees. If the bees are still there when the bats decide to return in the breeding season, again the bats will not use this cluster roost and will use one of many more that the bats in the area use for breeding purposes. To me then you could go with option 5 or you could maybe suck out the bees with a bee vac. I have come across this problem a few times in the past 25 years of dealing with bats and the bats have always left when bee or wasps arrive on the scene.

IS THE ANSWER REALLY A LEMON?

Researchers have been evaluating the effectiveness of lemon juice as a treatment for Varroa. M.F. Abdel-Rahman and S.H. Rateb mixed pure lemon juice with 1:1 (w/v) sugar syrup in concentrations of 10%, 25%, 50%, 75% and 100% and the solution was applied at the rate of 5ml per seam of bees. Colonies were treated 5 times at 6 day intervals. The success rates were 32.5%, 40.5%, 82.9%, 84.4% and 86.6% respectively.

Polish beekeeper Dominik Ptak reported on Bee-L that he had tried the method in Poland and reported achieving a 90.5% control with a single application. He says that the mixture must be lukewarm and freshly made; as with oxalic drip treatment the colonies should have little brood. So this is a November/December treatment.

It might be worth a try - unlike oxalic acid, we could always drink it if it does not work!

Full paper here: <http://www.saudibi.com/files/image/pdf/conT6/100.doc>

Peter Edwards **STRATFORD-UPON-AVON & DISTRICT BEEKEEPERS' ASSOCIATION**

NEW ASIAN TYPES OF *VARROA DESTRUCTOR*: A POTENTIAL NEW THREAT FOR WORLD APICULTURE

The full paper is available here for those that wish to read it: <http://www.ars.usda.gov/SP2UserFiles/Place/64133000/PDFFiles/473-Navajas--New%20Asian%20Types%20of%20Varroa%20destructor.pdf>

But I thought it worth quoting this section:

4.5. Implications for world apiculture

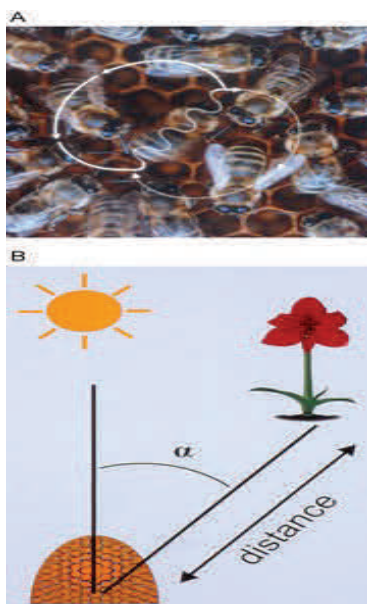
New *V. destructor* haplotypes that colonize *A. mellifera* may show slight differences in their life cycles, which cause them to become more virulent than the current K1-1 and J1-1. Indeed, J1-1 is assumed to be far less virulent to *A. mellifera* than K1-1 (de Guzman and Rinderer, 1999) and is thought to be displacing J1-1 in places where the two are sympatric (de Guzman et al., 1997; Anderson, 2000; Garrido et al., 2003).

These observations caution against the free movement of honeybees and signal the need for strict and proper quarantine for the trade of live honeybees between countries.

Peter Edwards

The Waggle Dance.

The waggle dance was first scientifically described by the Austrian ethologist Karl von Frisch. (1866-1982). By performing this dance, successful foragers can share information about the direction and distance to patches of flowers yielding nectar, pollen and water sources. It was once thought that bees had two distinct dances - round dances and waggle dances - the former indicating nearby targets, the latter for distant targets, but it is now believed that a round dance is simply a waggle dance with a very short waggle run. The dance consists of one to 100 or more circuits, each consisting of two phases; the waggle run and the return phase, the dancer moving through a small figure of-eight pattern; a waggle run followed by a turn to the right to circle back to the starting point, another waggle run then a turn to the left to circle back to the starting point and so on in regular alternation. Particular pheromones, alkanes and alkenes are released by the bee whilst dancing. The direction and duration of waggle runs are closely correlated with the direction and distance of the patch of flowers being advertised. The angle from the vertical on the comb being the angle to the sun, and the farther away the target the longer the waggle phase, with an increase of about 75 milliseconds per 100 metres. One second roughly equalling one kilometre. Bees are capable of altering the angle of the dance by 4 degrees per minute to compensate for the movement of the sun through the sky. In temperate habitats, the bees can still successfully forage even when the dance is experimentally obscured. In tropical habitats foraging is severely impaired if waggle dancing is prevented. This is thought to be due to the patchiness of resources in the tropical environment compared with the homogeneity of resources in the temperate one.



Top: Figure of eight-shaped waggle dance. A waggle run orientated 45d to the right of 'up' on the vertical comb (A) indicates 45d to the right of the direction of the sun outside the hive (B). The abdomen of the dancer appears blurred because of the rapid motion from side to side.

With thanks to Bournemouth and Dorset South BKA and E-Bees

Bayer buys Exosect Varroa Treatment

Monheim, November 16, 2010 – Bayer Crop Science announced today that it has acquired a product for the efficient control of Varroa mites (Varroa destructor) from Exosect Ltd., Winchester, United Kingdom. The market launch of this new bee health product in the United States is planned for 2011. First registrations in major European countries are expected from 2012 onwards. The acquisition also enables Bayer Crop Science to develop innovative bee health solutions and to commercialise new bee health products worldwide. Financial terms were not disclosed. The product is based on the innovative Entostat™ technology, a food grade powder refined from a natural wax which is sustainable harvested from a particular species of palm tree, combined with the miticidal active ingredient Thymol. After being spread directly onto the top of the frames, bees start to clean the powder out of the hive. It adheres to their bodies via electrostatic attraction. As they move throughout the hive, the powder is distributed to other bees and onto the framework of the hive, including open brood cells.

Stratford on Avon BKA and E-Bees

Self Destructor for Varroa

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."

1

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."

A step forward or back?

A recent piece in the BBKA news, "Old comb versus new comb" has triggered me into sharing some of my thoughts on comb. My background is in deep level mining and in that environment one learns quickly to accept nothing at face value. It seems as though this may be the reason why I've become cynical about much of the equipment that is currently hawked to the 21st century bee keeper. There appears to be plenty of evidence to suggest that current pesticide and varroacide practices lead to an unhealthy build up of unnatural substances in beeswax. Therefore, I find it entirely logical that brood comb should be regularly removed.

The question is what to replace it with. The policy of recycling wax in foundation must compound the issue of contaminant build up. I also feel that the uniform pattern of foundation is an unnatural demand to enforce on our bees.

Bees draw worker cells of differing sizes when allowed to. They are also happy to expend valuable resources on producing a much larger ratio of drones, than foundation framed bee keeping allows. Although the reasons for this are not yet understood I am sure that after 120 million years the bees have very good reason to do so. My other aversion to foundation is the size of the embossed pattern.

A well known supplier is currently selling foundation with a cell width of 5.7 mm. I transferred a nucleus of bees from such foundation into a top bar hive this summer. The cell size in this hive has already regressed to an average worker cell size of 5.3 mm. Others have reported cell size variation as small as 4.8 mm.

The imposed larger cell size is not only unnatural, but also has an impact on the laying space available to the queen, reducing it by as much as 35% and potentially leading to increased swarming. I would prefer my bees to have clean wax and a cell size and drone ratio of their choosing. This may well reduce my honey harvest, but I am sure the bees will be far healthier and contented. I find horizontal top bar hives time consuming in terms of returning the bars after inspection without any "fatals" and also the large lugs are cumbersome, so I decided to experiment on a National hive.

In deciding to dispense with the foundation I found that, with sensible frame handling, I no longer needed wire or fishing line support within a frame. Dispensing with wire then allowed me to dispense with expensive and overcomplicated frames, as no allowance is needed for wire expansion at the bottom of the frame. I placed a narrow cedar top bar on one side of the brood nest and a frame of foundation on the other. The bees drew a perfect rectangular comb, which I could easily remove, and ignored the foundation. I repeated the process by introducing another cedar bar on the other side of the brood nest and again the bees showed their preference over the foundation.

Although I found no issue with comb being attached to the side of the brood box, I think this was luck and so in the new year I will use a simple top bar with 10 cm short sides. This will give me combs which can still be easily examined, enable vibration communication, are drawn as the bees desire and are a lot cheaper! I intend to have a simple framed hive next to a traditional framed hive at several apiaries and look forward to reporting on results in terms of bee health, Varroa numbers, cell size and honey produced.

The next steps will be to assess appropriate frame spacing and also produce drone foundation for the supers, from the fresh wax I have recovered this year. Please note that these are my own personal views. I would welcome any thoughts.

*Matt Pitt, Editor, AN HES 'the swarm' December
2010 - the newsletter of the West Cornwall
BKA via e-Bees*

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**Review of *Queen breeding & Genetics* -
Eigin Holm, Northern Bee Books 2010**

The scope of this compact 90 page book gives an accessible account of the genetic theory needed to understand bee-breeding, and also of the practicalities of selecting breeding stock, rearing queens, and controlling mating.

It says very little about the important collateral aspect of drone-rearing. It has nothing to say about the tricky matter of designing and scheduling practical small-scale breeding programmes. The original Danish text has been peer-reviewed by competent persons, so it can be regarded as trustworthy, in spite of it being subsequently translated by someone who does not have English as their first language. I am still studying it in depth, but I would say it is a useful (and up-to-date) contribution to the somewhat scant literature on the subject of bee improvement. It is certainly not a one-stop shop for those wishing to learn their way into the subject.

Mike Saunders *L&DBKA*

‘Honeybee Democracy’ by Thomas Seeley

Princeton University Press 2010 Hardback About £19.00 on line.

Nowadays we are urged to practice ‘evidence based’ beekeeping. This book is not about beekeeping. It is about the research evidence on the social dynamics and reproduction of the honeybee colony. It has obvious implications for the actual practice of beekeeping. Seeley is an academic entomologist at Cornell. He has spent a whole career as a beekeeper and as a researcher, with his special interest being the swarm. In this book he discusses in detail the experiments he and others have done in these areas. In other words he discusses how we know what we know and the extent to which we can rely on the evidence.

The ‘democracy’ bit refers to the way swarms reach a consensus on where to house themselves. I was surprised by his observation that in the wild, most swarms die out over the winter for lack of a suitable home: winter is a tough evolutionary tool. Much of the book is a gathering together (and rewriting for the general reader) of the contents of his multiple publications, some in obscure journals. This is about as transparent as research in entomology gets: a wonderful read. I have ordered copies of this classic- in-waiting for the library.

Peter Ross Harrogate and Ripon BKA

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