

OLDHAM & DISTRICT BEEKEEPERS' ASSOCIATION

Incorporating Bacup Beekeepers

FREE Newsletter to Members

Volume 32 Issue 173

April 2018



Thermal image from the BBC shows the winter cluster of honey bees generating 35C at the centre and 9C at the edges. As the temperature warms up more honey will be consumed by the bees and the queen starts laying. Check stores!!! Especially this year!



ODBKA IS A NON-PROFIT MAKING ORGANISATION

AFFILIATED TO THE BRITISH BEEKEEPERS ASSOCIATION 2018.

www.odbka.org.uk

Reporting sightings of the Asian Hornet at the Non Native Species Secretariat-
alernonnative@ceh.ac.uk

OLDHAM & DISTRICT BEEKEEPERS' ASSOCIATION

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The Oldham Apiarist is published free to members. Deadline for letters or articles (preferably as a Rich Text Format or Word document e-mailed) is the 14th of each month.

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SUBSCRIPTIONS 2018

Registered member £27.00 (including BDI for 3 hives.).

Partner member £20.50 (including BDI for 3 hives).

Country member £15. Friend £6.00

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OLDHAM & DISTRICT BEEKEEPERS' ASSOCIATION

Next monthly meeting:

Pre-emptive swarm control and avoidance

Les Simpson

April 6th 2018

7.45 pm

At

Springhead Liberal Club,

136 Oldham Road, Springhead, OL4 5SN



BEE THERE!

ODBKA 2018 MONTHLY PROGRAMME

Meetings commence 7.30 – 7.45pm

19th January	A.G.M.
2nd February	Making Equipment Bob and Haydn Hive Types and unstated extra equipment. Ian B.
2nd March	IPManagement. Ian B. First inspections. Ian B.
6th April	Pre-emptive swarm control and avoidance. Les Simpson.
4th May	Problems and Solutions Forum My first year of beekeeping. Making a simple hornet wasp Catcher. Idrees Khwaja

WORLD BEE DAY IS ON SUNDAY, 20TH MAY

1st June	Queen rearing and other beekeeping aspects Guest Speaker. Martin Ainsworth from Kearsley,Bolton <i>Martin is a bee farmer and equipment maker</i>
6th July	Honey Extraction, Labelling and cappings. Ian Screen
August	No Meeting
7th September	Preparing for the New Season. Ian B.
5th October	Film Evening
2nd November	Honey show. Ian B to organise.
7th December	Christmas Party (Jacob's table)
18 th January 2019	AGM

The programme is subject to change and members will be informed via the newsletter. Current Club membership is 33. (Dec 2017). 11 Associate members (partner members, country members and Friends of the Association).

This edition of the newsletter has strong theme on preparing and being vigilant for active beekeeping.

1.Snippets, Courses, For Sale

Potential silver bullet or another false hope? - Lithium Chloride

German scientists based at the University of Hohenheim have recently discovered that a tiny dose of the compound, lithium chloride kills Varroa destructor mites without harming the honeybees.

Scientists at the Hebrew University of Jerusalem had experimented with a technique called RNA interference. They fed honeybees double stranded RNA (ribonucleic acid) via a sugar solution in an effort to remove vital genes in varroa mites. The mites ingested the RNA via the bees' haemolymph and subsequently died.

Following on from this research, the German scientists repeated the experiment but also looked at a control group which was fed with sugar solution containing a different RNA that should have been ineffective. These mites also died, leading the scientists to suspect that it was the lithium chloride used to produce the RNA, and still present in the sugar solution, which was actually what was killing the varroa.

Subsequent experiments confirmed this hypothesis. It was found that feeding honeybees very tiny amounts of lithium chloride over a period of 24 to 72 hours killed 90 to 100% of varroa mites without significantly increasing bee mortality. The researchers state that lithium chloride will not accumulate in beeswax and has a low toxicity for mammals however, wider studies on free flying colonies will be required, as well as analyses of potential residues in honey. The Hohenheim researchers are continuing their study and plan to work towards a lithium chloride based treatment for use with honeybees.

Full article: www.realclearscience.com

Thanks for this summary to Warwickshire. BKA via e-bees.

Seven (7) we know is a cardinal number and denotes things of importance such as 'the seven wonders of the ancient world'. Considering beekeeping, what should 7 denote - such as the seven best items of beekeeping equipment? These suggestions from a Warwickshire Beekeeper, Maurice West.

1. **Good Quality Bee Suit.** Buy whatever you feel comfortable in. But remember that in summer a full suit can be very warm, so you may need two types.
2. **'J' type hive tool.** A well designed useful piece of equipment, because of the shape of the tool.
3. **Top Bee Space.** Easier to work with compared to bottom space and much more efficient in use.
4. **Ashforth or Miller Feeders.** These are overall feeders, which fit directly over the brood chamber and when in use can hold up to 2 gallons of syrup, making feeding a much easier task.
5. **Framed Wire Queen Excluders.** The advantage of the wire type over slotted is that the wires are smooth and more bee friendly, having no sharp edges.
6. **Good Strong Hive Stands.** Creating the correct working height, allowing air to circulate underneath to prevent damp, and constructed strong enough to carry three or four full supers.
7. **Self Spacing Frames.** Hoffman frames are easy to use and far more efficient as there are no loose ends to drop off the top bars and less surface area to be propolised.

Do you agree - what is your list of the 7 best items of beekeeping equipment?

Bees confused by 'safe' weedkiller. American research by a high school student suggests that bees become disorientated when exposed to "safe" levels of glyphosate. This is a challenge for agro-chemical firms to answer as the firms advertise glyphosate as being safe for bees.

Source: Sunday Times. Page 7. 19/02/2018

Asian Hornets eating up the European Hornet?

A scientist, Dr Cini of University College, London, has found out that the Asian hornet (*Vespa velutina*) has a much broader diet than the European hornet (*Vespa crabro*) allowing it to survive when food is scarce. Both types like honeybees.

However all is not lost. The scientists injected the Asian hornet with *E.coli* bacteria and the Asian hornet was found to have a weaker immune system. This might lead to bio-control management techniques to control the hornets.

Source: The Times. Page 3. 18/220/18. Research published in the *Ecological Entomology Journal*.

Bees Sat-Nav slow to update!

We all know that the waggle dance helps bees find their way to forage. It was first decoded by Karl von Frisch in the 1940's. Researchers in India have found that the bee sat-nav is slow to update when their food source is moved. The research suggests that the movement of a food source previously foraged can throw the bees into a state of confusion

Axel Brockmann and his team trained 190 foraging bees from a single colony to seek out a sugar-water feeder located 300m (984ft) from their hive. When the feeder was moved either 100m (328ft) closer or 100m farther away, 35 of the foragers who found the new site and resumed the dance when they returned to the colony. Of these only 3 out of the original 190 immediately updated their waggle dance to reflect the correct distance.

Some of the others needed at least two trips back and forth to update their waggle dance to reflect the correct distance.

The waggle dance.

The basic rules are fairly simple. When scouts find forage they return to the hive to trace out a map on the face of the honeycomb. The bees walk around and around in a figure of eight, oscillating their abdomens in the distinctive manner that gives the dance its name. The longer the waggle the greater distance from the hive. The orientation of the dance shows the forage's location in relation to the sun.

In short- the angle of the dance in relation to the sun shows direction. The duration of the dance indicates the distance to the forage (food).

Source; The Times. page 24. 26/2/2018. Oliver Moody, Science Correspondent.



2. Courses/ Exhibitions/Conferences

Course; An Introduction to Top Bar Hives – includes make your own

This thought provoking and practical course aims to introduce participants to top bar hive beekeeping and its application in Africa and the UK.

- We will discuss the practice of beekeeping in both East and West Africa and various styles of hive.
- We will demonstrate making top bar hives from both wattle and daub and wood.
- You will be provided with materials to make your own wooden top bar hive to take home. If you prefer you can help someone make theirs. The hive will be fully functional and suitable for use in the UK.
- We discuss beekeeping in the context of sustainable social enterprises for the relief of poverty.



Suitable for those with and without beekeeping experience.

This course is run in conjunction with the Fell Edge Farm Centre who is generously providing the venue.

Course Tutors Dawn Williamson & Paul Bloch – Bees Abroad Project Managers

Dates Saturday 7th April

Start/Finish 9.00 to 17.00

Venue Fell Edge Farm, Skipton, West Yorks. LS299JX

Waged: £45 Unwaged: £25

Cost of materials to make one hive:

Waged: £70 Unwaged: £50

Book via Bees Abroad on-line shop or www.beesabroad.org.uk



3. For sale

John Ogden (07867557120) is selling the following items:

John is selling food hygiene standard honey collection tubs and honey gate valves.

Honey gate valve £3.50 each
10 litre Tub without valve £3.50 each
10 litre tub with valve £9.50 each
20 litre tub without valve £4.00 each
20 litre tub with valve £10.00 each
Bee Towels £3.50 each

All cheaper than can be found on e-bay.

Candipolline Gold now back in stock –one size only. Rest sold out.

½ Kg size @ £3

2. Hive manipulation cloths

Hive manipulation cloths are to help the beekeeper when handling frames to keep the bees in the hive and quiet.

Oldham Beekeeper **George Powell** is making and selling them.

There are two types available:

1. Brood Box cloth made from stainless steel rods and awning canvas. £15
2. General brood/super cloth made from wood dowels and awning cloth £5

www.georgepowell2312@btinternet.com

3. Bob's Jars.

A box of 72 round 1lb jars plus lids (gold metal) will be £27.50.

12 ounce octagonal jars, twist on lid, at £4.50 for 10.

1/2lb round honey jars, screw lids, at £4.50 for 10.

These are now in stock, although the latter are limited in number!

Bob also has spare frames and foundation both National and 14x12 size as well as feeders, bee escapes etc.

Bob's Bee Supplies
Grab Your Jars Now
While They Are Still Low!

*Frames, foundation,
jars and lids*

**Any special bits for hives
i.e., varroa Floors, Snellgrove boards etc
let me know**

Ring Bob on:
338 5392 or 339 4819

Other prices can be obtained via Bob or the editor.

Lancashire Honey Bees.

Relatively local Buckfast and Carnolian Bees for Sale.

Nucs: 5 frame nuc £150. 6 frame nuc £175 (Queen marked and brood at all stages)

Queens: Buckfast or Carnolian £29 each.

Contact: beebreeder@hotmail.co.uk.

This is the first time contact has been made with this beebreeder so feedback would be welcome. Not verified if the queens have been mated but would guess so- if this is correct-a good price!. Editor.



April in the Apiary

Work by Beekeeper	State of Colony	Forage
<ul style="list-style-type: none"> • Start regular checks of brood box • Full check of brood diseases • Add supers • Carry out comb change- shook swarm or Bailey Comb change • Cleanse hive (clean floor). 	<ul style="list-style-type: none"> *Queen laying strongly if good nectar flow *Colony increasing in size *Drones being laid *Queen cells produced. 	<ul style="list-style-type: none"> *Cherry blossom *Hawthorn * Apples * Dandelion *Mahonia.

Additional Comment.

See the notes from the March club meeting and those for new beekeepers.



Les Simpson's Jottings.

1. It takes 4 million flowers to make one kilo of honey.
Honey combs are at the heart of the hive for nectar, pollen and honey.
A single worker makes ½ teaspoon during her lifetime.
2. The queen bee has only one mating flight? - makes enough eggs for 2-4 years.
The queen at the height of the season can lay 2000 eggs per day.
Fertilised eggs lead to workers and unfertilised eggs lead to drones.
3. In spring place super foundation/comb in the brood box to encourage the bees to develop a frame of drones. Can help in varroa management.

REQUEST FOR HELP IN BEE SURVEY

My name is Victoria Buswell and I am a Ph.D. student working full time at the University of Plymouth on a collaborative 4 year project with B4 (a community interest company: Bringing Back Black Bees). This project is funded by the Natural Environment Research Council (NERC).

The aim of the project is to assess suggestions from bee-keepers that dark bees have a suite of different behaviours and characteristics in comparison to other sub-species, and further that these might be highly regional in their nature. The project will measure these differences, and match those with genetic signatures to confirm the lineage of bees showing different traits. It also aims to identify the parts of the genome that might be under rapid change in these sub-species. The wider aim of the project is to inform the management and conservation of honey-bees across the UK.

While some of the trait differences might be well established in the beekeeping community, to date published, robust empirical evidence is lacking.

The kinds of traits that we're interested in gathering data on are, for example, drone brood timings, worker brood cycle, thriftiness and worker lifespan. We need as many people as possible to fill in the survey: this is a jointly funded project that relies on the bee-keeping community just as heavily as the scientific one for its overall success. The survey was designed in collaboration with bee-keepers and tries to get as much detail as possible whilst at the same time being practical and feasible for bee-keepers to complete.

Once again, this project will be impossible without your help – it is a national survey, which will require you to measure and record specific parameters throughout the season. The survey is open to all bee keepers regardless of the sub-species you keep. We require comparison species, for example if you keep dark bees, Italian bees, Carniolan bees or Spanish bees we really value your participation in the project.

We will regularly update the community on the progress of the project through updates on the B4 website, or we can send you email/mail updates too if you would prefer.

If you are interested in taking part in the survey please just send your name and address by email to beesurvey@plymouth.ac.uk.

Please note there is no closing date to the survey.

Many thanks,

Victoria Buswell

Registration takes 5 minutes max. Only piece of information not at hand maybe your postcode. This research aligns well with Iddy's interest in bee progeny- selecting the traits of a queen bee.

NOSEMA - THE SILENT KILLER

Nosema is a disease caused by a microsporidian parasite; a spore forming fungus. It invades the gut of the adult bees, reducing their ability to digest pollen and shortening their lives quite considerably. The digestion system breaks down and the bees are thought to die of starvation.

Larvae do not get infected with Nosema but there have been cases where Nosema has been detected in pupae -however, in general it is a disease of the adult bee.



Staining on the front of a WBC Hive

The impact on the adult bees is:

- Worker bees cannot produce brood food therefore, cannot be effective nurse bees. They become foragers early and die early.
- Queen bees stop laying eggs and die within weeks.
- Drones have reduced fertility, are weaker, their semen becomes infected with spores and they have a reduced lifespan. They are unlikely to catch a virgin queen to mate with her.

The impact on the colony:

- Colony does not expand in the springtime.
- Dwindling numbers of bees.
- Neglected brood.

- Staining on the outside of the hive and inside on the comb (Nosema apis only).
 - Secondary diseases appear, especially Chalk Brood and AFB.
- Colony dies -it is now obvious that any colony infected with Nosema is not going to thrive ,



Faecal staining on the combs

It is important those beekeepers:

- Check colonies for this disease,
- Know how to deal with infected colonies
- Adapt their beekeeping practices to minimise the risk of getting the disease or spreading the disease amongst their colonies.

Colonies are most at risk when the bees are unable to fly – so over the winter and during prolonged spells of bad weather. Once bees are able to fly then they can go on clearing flights, thus removing spores from the colony. The disease is spread within the hive from adult to adult. A single infected bee can produce 200 million spores.

The biggest cause of infection is from spores in faeces. House bees get infected while cleaning the hive. These contaminate other adult bees and further contaminate the combs. The disease is spread from colony to colony by bees and the beekeeper; the bees by drifting and the beekeeper by bad hygiene techniques.

How to DO a Brood Disease inspection

It is good practice to carry out regular checks for brood diseases and at the very least once in spring and again in the autumn. So now is the time to plan your next brood inspection. Before undertaking a brood disease inspection, first of all make sure you can identify normal brood, and then look carefully for the abnormal within the normal shown below.

Brood Diseases

The two main diseases you are looking for are American Foul Brood (AFB) and European Foul Brood (EFB) which are notifiable by law. EFB is far more prevalent than AFB and if caught early enough, the colony can usually be saved with treatment and advice from the Bee Inspector.

However, there are other less serious brood diseases some of which are more common such as Chalk Brood, Sacbrood, Bald Brood, Chilled Brood and Varroosis caused by mites. Excellent descriptions and illustrations of all these can be found in the newly revised 2017 version of 'Foulbrood Disease of Honey Bees and Other Common Brood Disorders' which you can get a copy of, or view on BeeBase at www.nationalbeeunit.com

The objective of this article is to explain the organisation and process for carrying out a disease inspection on a double National Brood Box with supers in place.

Equipment Needed

Full personal beekeeping protection, smoker, hive tool, tweezers, match sticks, torch, nuc or empty brood box to provide an 'inspection box' with lid, bucket of washing soda, spare roof, and to prevent robbing a spare crown board.

Steps to Follow

Step (1) - Smoke the colony and while you wait sort out your equipment and set up a safe working area around the hive, so you are not stepping over other equipment. Place the 'inspection box' to one side of the hive with the spare roof next to it. Remove the hive roof and place on the ground on the other side of the 'inspection box'.

Step (2) - Leaving the crown board in place, remove any supers and to ensure hygiene, place them on the spare roof so they are not directly on the ground. (These do not need inspecting.)

Step (3) - Next, leaving the queen excluder in place, split the brood boxes and place the top brood box on to the upturned hive roof, then cover with the spare crown board to prevent robbing.

Step (4) - Now turn your attention to the bottom brood box. Gently smoke the frame lugs if needed and remove the dummy board plus 2-3 frames of stores into the inspection box, after quickly checking whether the queen is on them. (These frames do not need inspecting.) This will create a space for you to work in.

Step (5) - Move any further frames of stores to the back of the box until you get to the first brood frame.

Step (6) - Lift out the first brood frame, checking the dark side, furthest away from you first, then the near side to ensure the queen is not on it. If she is, either cage her or put this frame into the inspection box and replace the lid. If the queen is not there, lower the frame into the middle of the gap and with your fingers underneath the lugs, shake downwards sharply 2 or 3 times to dislodge the bees into the bottom, without banging the box. Now the frame is clear of bees, you will be able to examine the brood systematically and thoroughly. You will need to repeat this procedure with each brood frame in turn.

Step (7) - First check whether you are seeing a normal brood pattern, with regular areas of dry digestive biscuit coloured, slightly domed worker brood and any larger drone brood shaped, pearly-white, with clearly segmented bodies, lying flat within their cells, radiating out from the larger to the smallest day old larvae. Outside these, regular patches of single eggs, shaped like minute grains of rice should be laid in the bottom of each cell. If you regularly change out old comb, these should be easy to spot. Hopefully, the queen has prolifically laid wall-to-wall brood with very few empty cells. An old or failing queen may have a more haphazard pattern but the individual larvae and cell cappings should still be normal.

Step (8) - Now start looking for the abnormal. It doesn't matter whether you look at the sealed brood first or the larvae, but keep to a system.

- For sealed brood first look for sunken, moist, greasy looking cappings that could be a sign of the spore forming bacteria AFB. Small irregular perforations in cappings can be a sign of AFB, but could also indicate Sacbrood or Chalk Brood.

- A fairly reliable test for AFB is to insert the end of a match stick into the cell and probe the contents before slowly withdrawing. If

AFB, a rope of between 10 - 30 mm will form between the cell and matchstick. Dispose of the matchstick in the smoker.

- Also angle the frame so the light comes over your shoulder and down into each cell, allowing you to scan the bottom of the open cells for hard, dark scales, that can't be removed. Use a torch if the light isn't good.

- Search the frame for any larvae that are discoloured, lacking segmentation and lying twisted in the cell. This could be caused by the bacteria EFB.

- Use your tweezers to pull out the suspect larva and place it on the side of the frame to examine closely. If the tip of the larva is pointed upwards in the cell, like a Chinese Slipper and it comes out in a fluid filled sack- the cause will be the virus Sacbrood.

- Very liquid or rotting pupal remains in cells, similar to EFB can be the result of varroa infestation. Hard white, grey or black pellets in cells, that can be removed, are an indication of Chalk Brood. Uncapped cells with normal pupae inside, often in a line, is the sign of Bald Brood, frequently caused by wax moth infestation.

- Any larvae removed by tweezers should be disposed of in the nozzle of the smoker and wash tweezers, hive tool and hands as necessary.

Step (9) - Once all the frames in the bottom brood box have been examined as above, reassemble the box, smoke the top bars to send the bees down and also smoke under the bottom of the top box to drive the bees up a little to avoid crushing bees as you replace the top brood on the hive. Squashed bees are another source of disease, not to mention angry sisters with stings ready!

Step (10) - Remove the spare crown board and queen excluder, checking the underside for the queen, then place in front of the hive so the bees can climb up to the entrance. After removing the dummy board and some frames of stores to create space, proceed to examine all the brood in the top box, remembering to check for the queen before shaking the bees off and use the smoker to calm the bees if they get agitated.

When to Seek Expert Advice

If at any stage you suspect you may have FoulBrood, close up the hive immediately, reduce the entrance right down to prevent robbing, scorch or sterilise all equipment used. Then place a voluntary standstill on your apiary (no bees, equipment or bee products can be removed until given the 'all clear').

Contact Regional Bee Inspector – our Inspector retires this month. No replacement has been announced as yet.

Hopefully you will not find anything serious and you can close up the hive and sterilise all equipment used and proceed as normal.

Remember

Robbing, drifting and swarming can all be the cause of disease transfer; however the biggest cause of all is poor husbandry practices by beekeepers.

Courtesy of Lynn Cox, Farnham BKA-adapted by the Editor

Bee Hive Management Software

Modern computer technology has a lot to offer to the beekeeper and can make beekeeping both easier and more interesting.

Not the least is the remote monitoring equipment that we have featured in the February 2105 edition of, and is the subject of the article in the February edition of **BeeCraft** which highlights the theft alerts capability of the Arnia equipment.

One of the first things that every experienced beekeeper seems to have in common is rigorous record keeping. For some who are blessed with an excellent memory this information can be kept in their head, but for the rest of us written record keeping is a must. Paper records can be a practical solution, but for those who like more detail and options - and can overcome concern about honey and high tech not mixing - should consider what the PC or mobile phone and Hive Management Software has to offer.

There are many different software applications available, including:-

(1) **Beetight** www.beetight.com/

Beetight is online hive tracking and recording software. It is free to use for the first 6 hives and then costs \$15 per year. It is easy to use, looks nice and even has mobile apps that work on various mobile devices and smart phones, including an iPhone or iPad.

Beetight is useful, allowing you to easily record details of inspections and manipulations; treatments and feeding; honey harvests, including records of nectar sources and batch codes; and track colony temperament.

You can enter in the details of various apiaries (if you have more than one), record the hives in each of these apiaries and then record the details of each inspection on each hive. It all works well and you are able to download the inspections as a csv file too. This last point is very important when using online recording software as it allows you to keep a copy of your data on your own computer.

Beetight seems to work well and many beekeepers have been impressed with it, but it may be a little too restrictive for some.

(2) **Hive Tracks** www.hivetracks.com/

This has both a freeware version and full version. The focus is on overall colony health, looking at key indicators such as brood pattern, honey stores, etc.

One of the features is the dashboard, which shows at-a-glance tasks coming up, number of inspections, average hive condition and a map of the apiaries. Over time you can also see the strength of the hive change, and relate this to specific events (re-queening, robbing etc). It also includes a 'Hive Builder' tool that provides you with a graphical representation of each hive at any one time. This shows you the number of supers on the hive, the type of floor it has, roof it has etc. etc.

If you have more than one apiary the map of your apiaries and the foraging range for each is also another nice feature, and helps show where you need to be looking to assess what is flowering and if there is enough food out there for your bees.

Click this link for an interesting video about the software.

www.youtube.com/watch?v=yG2HEpgyBSM

(3) **Hive Keepers** www.hivekeepers.com/

If you like keeping detailed notes, this is the system for you. Everything is customisable, and you can keep notes down to individual frames. If you are a 'details' person then you will love it. It is a beautifully crafted app. There is also a good set of statistics and summary pages. These apps are all worth a review – also BeeBase has a colony record management tool.

New Beekeepers

SPRINGTIME FOR BEGINNERS (AND OTHERS!)

Spring is nearly here again, and I was recently asked by a novice how soon he could look in his hives. I passed on the advice I was given as a beginner- don't disturb the bees unless it is really necessary and satisfying natural curiosity does not count as necessary! I wondered what our library of bee books had to say and found, as usual, that sometimes they flatly contradicted each other. This is a selection of the advice that they mostly agree on.

More harm than good is done by examining a hive too early in the year. The bees resent the disturbance and may ball the queen-a disaster, and there is a risk of chilling the brood-a minor disaster, so curb your impatience! This does not mean that you ignore your bees altogether as a great deal can be seen from the outside of the hive.

On mild days in February and March look and see if cleansing flights are taking place and that all the colonies are flying freely. Is one hive much quieter than the others? That could mean a weak or diseased colony. It could be that a virus disease has weakened the colony overwinter, whilst excrement stains on the hive suggest that Nosema is a possible cause. (See page 11) It can also mean that those few bees are robbers, cleaning out a defunct hive. To ascertain this, quietly take off the roof and crown board and peer down between the frames.

If there is a cluster of live bees, you have a colony of some sort. If the bees are scattered widely over mainly empty frames, they are robbers.

(If you are sure the colony is dead, remove and deal with the hive immediately, or close the entrance securely until you can do so.)

Is pollen going in by large leg-loads (assuming it is available)? If so, brood rearing is under way.

A few dead bees at the hive entrance are normal in spring but heaps of them are a danger signal. Similarly, if you gently insert a piece of wire in the entrance (remove the mouse guard first) and sweep around, a dozen or so corpses should come out but not many more.

Weigh the hives with digital luggage scales to estimate stores. Do not rely on the rough and ready hefting method. More bees starve in March and April than in all the rest of the winter, so this is important. Beekeeping books sanctimoniously tell us we are **bad beekeepers** if we fail to ensure that stores are OK in the autumn but we are all human and mistakes sometimes happen. Give a block of candy over the feedhole if it is cold or a medium syrup from a contact feeder if the bees are flying freely.

Lift the roof occasionally and make sure that the crown board is dry. If not, the hive may have sprung a leak and needs immediate attention. Damp is a killer in early spring and open mesh floors greatly help with ventilation. In February/March, however, to help keep the brood warm, insert the varroa tray (clean it regularly), swap the mouse guard for an entrance block and maybe put a warm cover on top of the crown board-polystyrene is quite good.



To treat or not to treat?

Despite it being 25 years since varroa was first detected in the UK, the debate over whether or not to treat bees or leave them to develop their own tolerance or resistance still rages. Peter Neuman from the Vinetum Foundation and Tjeerd Blacquièrè of the Dutch Ministry of Economic Affairs recently published a serious article on this topic after studying research from all over the World. They summarised their crucial findings as:

- Treating against Varroa destructor not only prevents host-parasite co-evolution, but may also add to the exposure to pesticides thereby possibly compromising colony health.
- Recent evidence suggests substantial local adaptations of honey bees enhancing colony survival.
- Breeding for Varroa destructor-resistance over more than 20 years has still not resulted in survival of untreated colonies, but natural selection has delivered [it] multiple times, thereby suggesting that breeders should choose traits favoured by natural selection. This suggests fundamental conceptual flaws in both commercial honey bee queen rearing and breeding.
- Since the fitness of a honey bee colony clearly is the number of surviving swarms as well as the number of successfully mating drones (all other traits are only tokens of fitness), the selection by beekeepers for low swarming tendency of colonies and removal of drone brood, mainly to combat V. destructor, remain probably the key factors in limiting natural selection [for varroa resistance].
- Beekeeping interference with natural selection, in combination with globalisation of apiculture may have now reached levels where ill effects are inevitable at the colony level.

Despite the growing body of research to the contrary, the National Bee Unit continues to recommend beekeepers to treat their bees with chemicals for varroa!

What are honey bee pheromones?

Honey bees work extremely hard to maintain the desired environment within their hive. In addition to maintaining temperature and humidity, they maintain an extremely complex cocktail of pheromones, which is largely lost every time the hive is opened up.

A pheromone is a chemical produced by an animal (including insects) which changes the behaviour of another animal of the same species. In honey bees they are a major means of communication within the colony. Honey bee pheromones are mixtures of chemical substances released by individual bees into the hive or environment that cause changes in the behaviour or physiology of other bees. Together with the honey bee dance, honey bee pheromones represent one of the most advanced ways of communication amongst social insects.

There are two forms of pheromone, liquid pheromones which are tasted and volatile pheromones which are detected through smelling.

Types and Uses of Pheromones

Pheromones can be divided into two distinct types:

- **Releaser pheromones** which cause rapid changes in behaviour, such as the alarm pheromone which quickly engages other bees to help defend the nest.
- **Primer pheromones** which cause long term changes in both physiology and behaviour, such as the brood pheromone which suppresses worker bee ovary development.

Honey Bee Pheromones

Honey bees produce a wide range of pheromones:

- **Alarm Pheromone**, produced by workers, is a releaser pheromone that calls nest mates to help defend the colony from intruders. A sting, which also releases alarm pheromones, causes other bees to sting as well.
- **Brood Ester Pheromone**, produced by larvae, is a primer pheromone that, amongst other things, inhibits ovarian development in worker bees.
- **Drone Pheromone** is released by drones and allows them to find each other and form drone congregation areas.
- **Dufour's Gland Pheromone** is not clearly understood except that it has something to do with interactions between queens and workers, and between laying workers and non-laying workers. The composition of the pheromone changes as a worker evolves into a laying worker.
- **Egg Marking Pheromone** allows worker bees to distinguish between queen-laid eggs and worker-laid eggs. At one time, scientists believed that the Dufour's gland pheromone marked a queen's eggs, but now egg-marking pheromone appears to be separate.
- **Footprint Pheromone**, also known as trail pheromone, is found in many social insects. Worker honey bees secrete the pheromone from their feet as they go about their daily business, and the odour is attractive to other honey bees. In theory, footprint pheromone is used for orientation and may aid the workers in finding the hive entrance or in locating a good food source, but the specifics are unclear.
- **Forager or Worker Pheromone** is released by older forager bees to slow the maturing of nurse bees. It is believed that this primer pheromone acts as a distributed regulator to keep the ratio of nurse bees to forager bees in the balance that is most beneficial to the hive.
- **Nasonov Pheromone** is produced by worker bees to attract nest mates to a colony entrance, a clustering swarm, or a food source. If you move a hive a short distance from its original location, you can see workers exposing their Nasonov gland and fanning the scent into the air. Nasonov can also be used to attract swarms to nest boxes.
- **Tergite Pheromone** is produced by all bees in the hive but the composition and amount vary with the type of bee. Virgin queen tergite pheromone is believed to be related to fighting among virgin queens.

* **Other Pheromones** produced by most honey bees include rectal gland pheromone and wax gland and comb pheromone.

Specific Queen Pheromones

Queen bees also produce a range of specific queen pheromones:

- **Queen Mandibular Pheromone** plays many roles in the hive, including regulating social behaviour, swarming, mating, and suppressing laying workers. This pheromone is often

known as “queen substance” the pheromone is spread throughout the hive by the worker bees, thereby alerting the colony members that the hive is “queen-right” and operating normally.

- **Queen Retinue Pheromone** entices worker bees to groom and feed the queen, and causes a circle of attendants to surround and care for her.
- **Tarsal Pheromone** is similar to footprint pheromone but it is only secreted by the queen. The pheromone is deposited on the surface of the comb and is believed to delay or prevent queen cell construction.
- **Faecal Pheromone** is produced by virgin queens. In-hive squabbles between virgin queens, or virgin queens and workers, are sometimes resolved when virgin queens squirt faeces on the aggressive bees. Workers covered in the pheromone-laced faeces back off in order to groom, and virgin queens covered in faeces are ignored by the workers.

Queen's Pheromone Secretions Change

During her lifetime, a queen bee will secrete numerous pheromones from various body sites. Virgin queens go undetected for the first three days after emerging and it seems unlikely that they make any pheromones during that time.

They then start secreting mandibular gland pheromones, but in smaller quantities and in a different ratio to mated queens. This ratio of pheromones is less attractive to worker bees than that secreted by a mated queen.

Her repulsiveness to workers is further enhanced by the secretion of faecal pheromone during her first two weeks of life and prior to her mating flights. Although some workers will groom and feed her, others will treat her roughly.

Virgin queen mandibular glands secrete several chemicals that are attractive to drones. From the age of about three days after emerging, her tergite glands secrete a range of chemicals and, during her mating flight(s) more chemicals from her mandibular gland attract drones to her when she enters a drone congregation area. Her tergite pheromones enhance this effect.

Immediately after a successful mating, the chemical composition of her mandibular gland pheromones changes to that of a mated adult and she becomes more attractive to workers. Her tergite glands also switch production to cuticular hydrocarbons which play a large role in the olfactory identity of the colony. Her tarsal glands start secreting footprint substances post-mating, which inhibits queen cell construction. Secretions from her Dufour's and Koschevnikov's gland enhance the retinue attracting properties of queen mandibular pheromone, although Koschevnikov's gland activity starts to degenerate after about two years and might increase the risk of swarming at this time.



Honey bee pheromones are complex!

They have multiple functions and are extremely important to the welfare of a bee colony. However, there is still much that is not known about these substances and their roles. One thing we do know is that every time a hive is opened up, much of the pheromone cocktail is lost and that it takes the colony at least 48 hours to restore the environment in the hive.

John Chambers. Warwickshire BKA via ebees.

THOUGHTS ON A WINTER EVENING by Michael Birt, Eva Holland and Christine Balshaw . Bacup Beekeepers

Often on a dark Winter's evening it may appear that I've nodded off in front of the wood stove, but the closed eyes and occasional grunt belie the truth that I'm considering how I will approach the next year's beekeeping. As a result of this endeavour I've decided that this year I will adopt a policy of entirely changing brood comb and as well as sterilising brood boxes each year. To many a beekeeper this will appear to be gross extravagance. There is indeed a cost, but then every investment has a cost. The question is whether the benefit exceeds the cost. So what is the cost? A pack of ten sheets of wired standard deep foundation costs £3.95. The time taken to frame sheets of foundation is about an hour. To draw the comb on the ten frames will require from the bees about one pound of wax equivalent to about five pounds of honey or four pounds of sugar given as syrup. So the exercise costs about £10 plus an hour's work per colony.

So what are the hoped for benefits? In broad terms it is a healthy and productive colony. My experience to date and I admit it is limited but encouraging, is that colonies are exceptionally productive on new comb and my top three productive colonies of all time have all been on new comb. A poor colony may only produce £40 worth of honey or less. A good colony can produce over £100 worth of honey. The possible benefits can more than balance the cost, though there are numerous reasons why one colony may thrive better than another.

There are a number of possible explanations why a colony prospers on new comb. The primary one is that changing brood comb drastically reduces the reservoir of disease pathogens stored in the colony. Many of the disease pathogens that cause serious damage to the honeybee spend all or part of their life cycle in or on the brood combs. These diseases include AFB, EFB, Nosema, Wax Moth, Braula, Chalkbrood and Stonebrood.

Consider Nosema which is thought to be endemic in much of England. It weakens colonies, slows down the build-up in spring and, in serious infections, can lead to the death of a colony. The disease is spread when infected bees defecate on the combs within the hive. In normal conditions the bees will defecate outside the hive, but when the bees are confined within the hive for long periods, then the bees can spoil the inside of the hive, spreading the disease to the house bees as they clean the hive.

Secondly, new comb gives the queen the opportunity to produce a dense compact brood nest in an area free from damaged comb and free from comb full of old pollen and granulated honey. Eleven frames of BS standard deep brood, fully utilised, are quite sufficient to support a colony of 80,000 bees. Do the maths if you don't believe this!

Thirdly, the transfer of the colony onto new frames requires the colony to produce wax and this, along with ample space for egg laying, inhibits the instinct to swarm, not entirely, but to a significant extent.

Generally the exercise of changing comb would be carried out in April or May when the colony is well established and expanding quickly. There are a number of management methods that achieve the end of putting the bees on new comb. The better known of these are the Shook Swarm Method, the Bailey Frame Change and, indirectly, the Snelgrove Method of swarm control. So that's what I'm trying this year. If it works out, great – if not there'll always be someone to put me right.

Editor's note. The opinions expressed here belong to the authors. Some of the opinions expressed are not supported in the article by evidence; however the article has some merit. Thank you to Michael, Eva and Christine for sending it to the newsletter.

Horticultural News

Hopefully in spite of the cold weather at the end of March/April a large number of plants will be in flower to provide good forage this month.

Trees● Alder (*alnus glutinosa*)● Hazel (*corylus*) should supply plenty of pollen in dry weather, but will soon be over.



- Poplar, especially balsam poplar
- Prunus, several varieties
- Pussy willow (*salix caprea*). Other willows are also coming into flower, a good source of pollen and nectar.

Shrubs and Climbers

- Blackthorn/sloe (*prunus spinosa*)
- Box, common (*buxus sempervirens*)
- Camellias, the more open flowered varieties display stamens. They don't all flower in March but early ones may be in flower.
- Cherry plum (*prunus cerasifera*)
- Daphne mezereum, very strong scent
- Flowering currant (*ribes sanguinum*)
- Kerria japonica - (not the more common double *K. jap. pleniflora*) - only the single variety is any good for the bees.
- Mahonias, some late varieties are still flowering.
- Osmanthus Burkwoodii is coming into bloom. Very sweetly scented
- Rosemary (*rosmarinus officinalis* and *prostratus*)
- Viburnum tinus and *V. bodnantense* Dawn
- Yew, common (*taxus baccata*)

Annuals and Biennia

- Wallflowers (*erysimums*)

Perennials and Bulbs

- Crocuses
- Daffodils
- Dead nettle (*lamium*)
- Euphorbia - some varieties are now in bud.
- Grape hyacinths (*muscari*)
- Heather (*erica carnea* and *erica xdarleyensis*) winter flowering heathers are still blooming well.
- Hellebores



- Pulmonaria (Raspberry Ripple amongst others)
- Scillas
- Species Tulips - the smaller species varieties flower early.
- Spring snowflake (leucojum vernal)
- Wallflowers (perennial erysimums) E. Bowles mauve
- Winter aconites (eranthus)

Wild Flowers

- Celandines (ranunculus ficaria)
- Gorse (ulex) This flowers most months of the year.
- Primroses

Courtesy of Margaret Lennard, Farnham BKA via ebees

March Meeting Attendance 0

Due to the adverse weather conditions the meeting was cancelled. However all is not lost as Idrees Khwaja and the editor have produced below some of the main elements of the evening in two articles.

Asian Hornet by Idrees Khwaja.

About the Asian Hornet

The Asian Hornet is an apex predator within its own environment; it's an aggressive and effective killer it has a direct impact on honey bee colonies by killing honey bees and honey bee brood to feed to their own brood larvae. Asian hornets also have an indirect impact on hive health, by causing honey bees to spend time and energy mounting a defence to the constant threat of attack and thereby inhibit foraging activities. This in turn decreases the productivity of the honey bee colony, which not only leads to reduced honey and pollen reserves, but also puts at risk the developing brood and the ability of the hive to provide effective pollination services.

Understanding the Asian Hornet Lifecycle

- Queens Emerge from hibernation – Feb to March
- First embryo nest made by Queen – April to May
- First brood of worker hornet emerge – April to May
- Nest construction and colony growth – May to September

- Mature active nest – September to October
- Emergence of sexual adults – mid July to November
- Mating (Numerous Queens are mated, each capable of establishing a new colony the following spring) – September to November
- Death of colony, mated Queens hibernate – November to December

Why Trap Them?

To confirm the presence of the Asian Hornet in your area.

If you think you have trapped an Asian Hornet you must report it, you can either download the Asian Hornet Watch app or email alertnonnative@ceh.ac.uk.

Early trapping of the Queen will stop her establishing a colony (traps to be put out early March as that's when the Queen first comes out of hibernation, traps must be removed at the beginning of May as not to attract the first emerging worker hornets to your apiary).

Trapping a Asian Hornet Queen could also help to reduce the spread of the Asian Hornet, as it has been estimated that the Asian Hornet could spread upto100km per year, meaning in theory it would only take the Asian Hornet 10yrs to spread the 970km from Lands' end in Cornwall to John O' Groats in Scotland.

Identifying the Asian Hornet

- The Asian Hornet Queen is approximately 30mm long and the workers are approximately 25mm long.
- The tips of their legs are yellow.
- They have a dark brown/black abdomen with a yellow/orange 4th segment.
- The head is dark from above but orange face on from the front.
- They have dark coloured antennae's.
- Their thorax is entirely velvety black.
- They are NEVER active at night.

Photo of an Asian Hornet



Making the Trap

- Take an empty two liter pop bottle or any plastic bottle that has a consistently even width along the sides.

- Using a sharp knife, cut off the top of the soda bottle just below where the start of the bottle sides is at even width.
- Fill the bottom of the bottle with bait about 2" deep.
- Insert the top of the bottle upside down into the bottom of the bottle (remove the bottle cap first). The pieces should fit together nice and snug, but use duct tape along the top edge to secure the pieces together if you need to.
- Set the trap out (in flower beds, close to a hedge, near the bird bath, etc.).
- The wasps will fly into the trap to get at the bait, but have trouble finding their way out. They'll eventually drown in the liquid bait.



Bait

This time of year the Asian Hornet Queen will be looking for two different types of food sources protein and sugar. Set out two different traps to see which bait tempts them best, and then continue to fill with that type of bait. Or you could do a sugar & protein bait together (for example: mixing juice with a piece of meat).

- Jam dissolved in water (sweet enough to attract the wasps but diluted enough to drown them)
- Fruit juice
- Beer
- Sweet Soda Pop
- Wine
- Maple syrup diluted with water
- Molasses diluted with water
- For protein baits add a piece of raw hamburger or a chunk of canned tuna, canned dog or cat food to a trap with fruit juices or even plain water (deep enough to drown)

the wasps but the piece of meat bait needs to be sticking out above the liquid surface to effectively attract them).

First Inspection- should be underway- weather dependent!

Not really the first inspection- only labelled this because it is more thorough than what should have been taking place before. That is checking the bees have enough food (fondant- below 14C) by either a quick inspection by lifting the crown board or hive 'hefting'- not to mention other checks such as the hive is still intact and monitoring the varroa mite (putting in the varroa board for a day or two). On this last subject if the mite drop is averaging 1-2 at this time of year everything is on course.

This is a critical time for the bees as the weather this year has not been kind- a very late spring?? Bees can be susceptible to disease- Nosema and Acarine.- which has an impact on brood development.

Weather- a general rule- below 10C no examination; 10-14C a quick visit; 14C no problem. .Bees do not usually fly below 10C. Spring flowers are appearing but the temperature is still below the seasonal average.

Key questions to ask around-

Food- have the bees got enough honey and pollen?

Room- Enough room to expand in the brood nest? Will supers be required?

Queen- colony queen right?

Queen Cells- Are there any?

Health- any signs of pests and diseases?

Comb Condition- Do I need to change comb?

Simple test- hold it up to the light- if you can see light through it- Ok- otherwise destroy and replace.

Spring clean- Do I need to clean up the hive?

Apiary- every thing as it should be?

This brief First inspection summary is a starter- a more in depth analysis can be gleaned by reading the National Bee Unit Best Practice Guide No.6