



September 2014

GBKA Dates for your diary

Thursday 11th September 2014 - Association Meeting Goytre Village Hall, 'Feeding Bees' a talk by Peter Guthrie 7.30 pm

Saturday 13th September 2014 - Usk Show

Sunday 14th September 2014 - Season end Apiary Session at Ochran Farm

Wednesday 17th September 2014 - Abergavenny Food Festival Taster Session, Ochran Apiary

Saturday 20th - Sunday 21st September 2014 - Abergavenny Food Festival GBKA display in Abergavenny Castle

26th-28th September 2014 - BIBBA 50th Anniversary Conference in collaboration with SICAMM, Llangollen, North Wales

5th October 2014 - GBKA taster session at Ochran Apiary

Monday 13th October 2014 - GBKA Committee Meeting

15th October 2014 - GBKA annual dinner, venue to be arranged. Please come!!

30th-1st November 2014 - National Honey Show, St. George's College, Weybridge, Surrey

Saturday 15th November 2014 - GBKA AGM followed by a talk given by Steve Smith

Beautiful visiting bees investigating the demonstration hive at Llanthony Show



What's going on here?

Is it time to meet the local Bee Inspector?

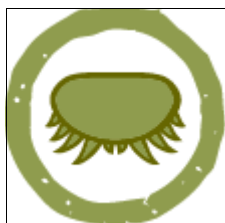


GBKA Ochran Apiary

Ochran Apiary is currently managed by a sub-committee of five beekeepers and coordinated by our chair Eric Long and Janet Bromley

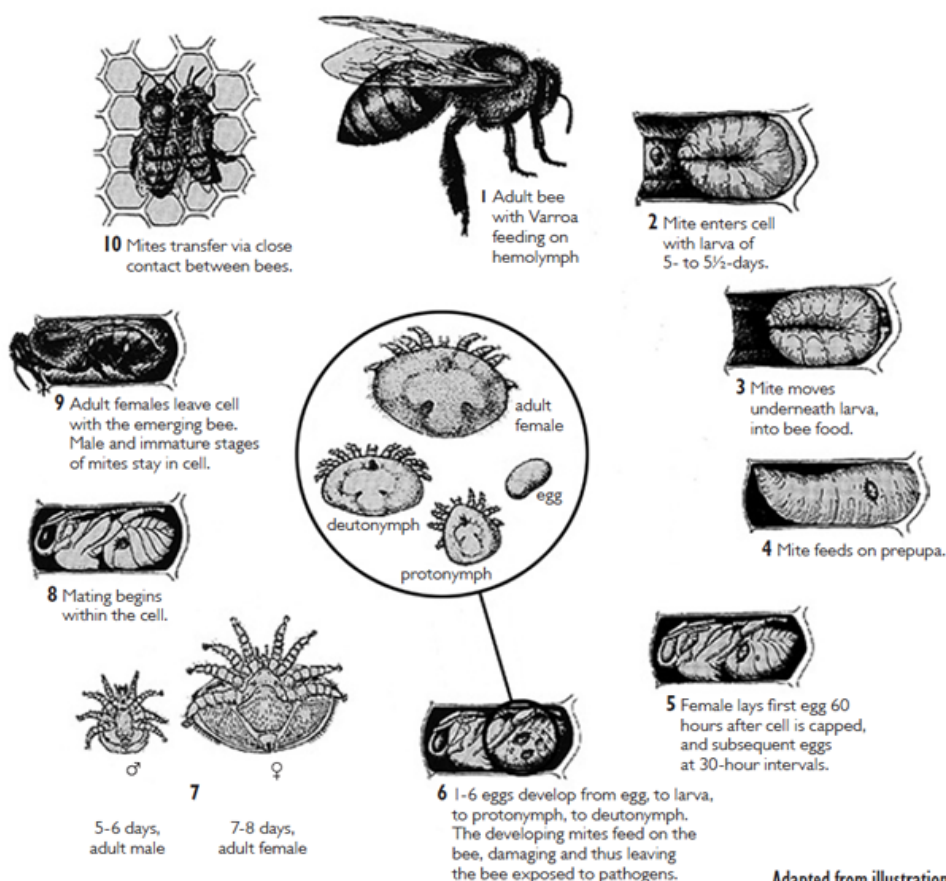
Testing Hyperthermia as a way to exterminate Varroa using the *chemical free* destructor

GBKA have been invited to test a Hivet device. Their report is rather long but for those interested, it is taken from their site verbatim. Hivet, the makers of the Varroa Terminator state that the primary cause of large colony collapse disorder counts in recent years is the Varroa. Despite the hard work of beekeeping organizations spreading the knowledge and despite of new chemicals used, the colony collapse disorder upward trend is alarming. Due to the critical world-wide situation today, they have con-



ducted extensive research about varroa mite and its life cycle. They have gained a sound understanding of the mite's behaviour when attached to bees; what happens after it enters honeycomb cell; how mating works; where, when and what eggs it lays and many

other details. Despite these remarkable findings, the Varroa parasite is still a hard nut to crack in today's beekeeping. Using chemicals for treatment leads to formation of resistant mites. Varroa mite is a very advanced parasite indeed, however it also has its weak spot. In the late eighties, professor Wolfgang Engels discovered that mites are more sensitive to heat than bees and bee brood. Mites live well in a usual beehive temperature (34-35°C), but it cannot withstand a temperature of 40°C and falls off bees. It is also known that the ratio of the mites on bees is 20% to 80% of the mites on brood. The time period when mites are on brood is called reproductive phase lasting 12 days. Time when mites are on bees, is called phoretic phase and lasts 3-12 days, or even longer in winter. Hyperthermia principle consists in a beehive temperature increase of a few degrees above the usual temperature. Achieving this is seemingly simple. The hive content is very sensitive to temperature change, especially towards the dynamics of the in-



Adapted from illustration by B. Alexander

crease (wax, eggs, larvae). Brood comb has a significant insulating properties and heats up very slowly. Bees do not allow the temperature to increase and they resist to a certain level very effectively (ventilation, cooling). Various official sources claim that hyperthermia treatment inside a beehive at full operation is impossible. But it can be done...



Device

The 'Varroa Terminator' device is capable of heating brood chamber and its contents effectively (honeycomb, bees and brood in all life stages) without destroying it, thus disposing of mites.

The device consists of two heating panels (upper and lower), providing uniform heating from panel's full area. Panels differ from each other. The upper panel is full and the lower panel contains escape gaps, which allow bees to partially ventilate the heated space and bring sufficient amount of fresh air. Gaps are of special construction allowing bees and the queen to leave brood chamber. For mites however, special gaps (or traps) represent a barrier which hinders their escape from brood chamber.

During treatment, it is necessary to reach a temperature of 42°C in brood chamber contents, without destroying bees and brood, including eggs. The heat is applied from top and bottom after connecting to a power supply of 230V/50Hz (from a socket, car's voltage converter or from a generator). Power consumption is approximately 120 W, and energy consumption per one treatment is approximately 0,3-0,4 kWh.

As the relative humidity decreases during heating, and this would damage the eggs and young larvae, it is necessary to ensure a sufficient humidity in the heated space of brood chamber. Two shallow water tanks, holding 100ml water each, are placed on the bottom panel, but bees do not have access to the water, otherwise they would start cooling. Evaporation from these tanks ensures sufficient relative humidity (60-70%).

Increased temperature forces bees to ventilate, but their effort is limited to ensure the air exchange and air movement among honeycombs. In case of thin-wall hives, one day before treatment, it is necessary to insulate the brood chamber on the outside with covers in order to prevent heat leaks and to avoid bees from cooling using colder walls. Using insulation frames is not necessary in warm weather.

Process

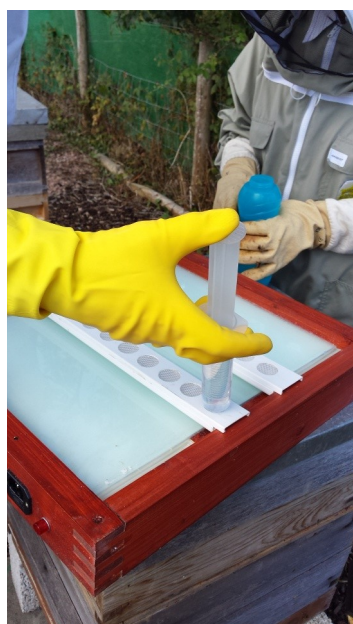
The treatment is done directly in one deep brood chamber, or in two shallow brood chambers. The lower panel is placed between bottom board and the brood chamber, the upper panel on top of the brood chamber then the device is turned on. It takes about an hour to reach a temperature of 42°C. At this temperature mites fall off bees present in the brood chamber. Mites are not dead immediately, they move around, but they are not able to attach onto bees again. Mites either die on the hot surface of the lower panel or get stuck and die in the traps. After reaching the desired temperature, the colony is kept at 42 degrees Celsius for three hours. The bees slowly leave the brood chamber and gather in the bottom board or entrance. The colony remains calm, increased aggressiveness was not observed.

After the three hours both panels are removed, being careful not to spill any water or lose varroa mites which have fallen onto the bottom tray. Bees return to the brood comb from bottom board and entrance. The following 12 days after heating, dead mites fall on varroa screen or bottom board. We can watch the daily count of dead mites from newly hatched bees.



With this, we have destroyed all life stages of varroa mites on brood and also mites which were on bees present in brood chamber. There are still mites on bees which were not present in brood chamber during heating. These will migrate and attack the open brood again. A repetitive heating will destroy these too.

Timing Since we have a device and a way of varroa mites disposal on bees and brood, it is necessary to know when to use it effectively. Maintaining varroasis on a level that does not harm the colony or does minimal damage must be our



main goal. The ideal time for treatment is when there are no supers with honey in hive yet, or after we removed honey supers. It is possible, however, to apply treatment even with honey supers present, but with a slight adjustment to the process. **When and how often?** Main principle: Keep varroosis level low throughout the year. First and the most important period is when fruit trees bloom. We could not treat varroa mites for at least six months!!! We are not even sure how many reproductive cycles it has passed. Spring treatment is

the most important, and it is a must. It is necessary to ensure that winter bees develop in an environment with reduced number of mites. One may be delighted in seeing lots of dead mites, but for the colony survival it may be too late already.

The first treatment, like said above, happens in Spring when there is brood in the hive. During this period it may look like everything is right even at different levels of infestation. The first Spring treatment significantly reduces the number of mites, where dead mites count shows us

what was the level of infestation which plays a very important role for further colony development (Table no. 1).

The possibility to perform Spring treatment is hyperthermia's greatest advantage.

Just for comparison, chemical treatment tries to exterminate mites at the end of the season. Next treatment using chemicals is possible by the end of next season, which is often too late. A large number of dead mites always indicates poor colony survival prognosis during winter, and leads to very unpleasant "surprises". Upon detecting the level of infestation, we can estimate growth, in other words, we will have varroosis under control. It is known mite's reproductive factor is 1.4 per cycle, but for practical calculations we shall use factor of 2, which means that each month the number of mites doubles.

Table no. 1 The level of infestation in a colony without Spring treatment

Period	Initial level						
April 1 st	10	20	50	100	200	300	400
May 1 st	20	40	100	200	400	600	800
Jun 1 st	40	80	200	400	800	900	1600
July 1 st	80	160	400	800	1600	1800	3200
August 1 st	160	320	800	1600	3200	3600	
September 1 st	320	640	1600	3200	6400		

The Table no. 1 shows initial level in the first row. The amount of mites doubles across the column according to relevant date. Numbers in red indicate a state of emergency if there is no treatment. Also in this period it is true that 20% of mites are on bees and 80% on brood. We obtain two crucial information after treatment. First is the number of mites fallen off from bees (phoretic mites). Second is the daily count of dead mites found on varroa bottom board. For example, finding 20 mites right after the heating would mean we had about 100 mites in the hive before heating (20 on bees and 80 on brood). Mites will continue to fall from brood, therefore we can expect a daily count of approximately 6-7 mites during next 12 days. If after the first Spring treatment, we destroy only 90% of mites on bees and brood altogether, then status at the beginning of the season is as follows:

Table no. 2 Projection of Varroa destructor count after first Spring treatment

April 1 st , before treatment	10	20	50	100	200	300	400	500
Extermination of 90%	-9	-18	-45	-90	-180	-270	-360	-450
Remainder after treatment	1	2	5	10	20	30	40	50

The difference is radical for further evolution of the situation. Looking at Table no. 1, we must not let the colony enter the new season with more than 50 mites. A colony without treatment could at the beginning of



August contain 1000 mites, which is a critical level already. Reducing the number of mites to a maximum of 50 in Spring, varroasis infestation slows down so much, that the colony can develop undisturbed within the next 4 months.

The average daily count of 20 or more mites after the first Spring hyperthermic treatment indicates that the prognosis for this colony would not be good without treatment. Using a simple reverse calculation (12 days by 20 mites) we find that we had 240 mites on brood plus 60 phoretic mites which means 300 as an initial level. Looking to the Table no. 1, the initial level of 300 mites shows, that it would reach critical level in 3 months (by June 1st). The average daily count of more than 30 mites after the first Spring treatment means that it is necessary to make another treatment after two weeks. Spring treatment is a significant intervention into Varroa's reproductive potential. It also provides a disease status check in individual colonies and beekeepers are no more Varroa "blind".

When to do the next treatment? Using hyperthermia, the deadlines associated to chemical treatment are history. However, we must keep in mind that we cannot let varroa multiply excessively. Even if we later reduce the amount of varroa by any method, the damage is irreparable. This leads to surprising colony collapse after applying "late but successful" treatment.

Varroa Terminator device allows you to treat colony at any time during the season. It can be used at the time of honey harvesting. The Table no. 1 shows the situation prognosis applying one treatment in Spring, where after April 1st there are 50 mites remaining in the hive. On August 1st, the situation would not be critical yet, however it can be improved applying one treatment during honey harvest. From the average daily count, we can estimate what was the infestation level. We can reduce the infestation by applying just one treatment during the season which fundamentally changes the situation and the amount in August does not even get close to the feared 1000. Again, we can check the infestation level by counting fallen off mites and from the average daily count in the following days. Heating before feeding removes most of mites and shows the current status. We should keep in mind that mites have a chance to quadruple its amount from mid-August to mid-October.

Conclusion The amount of varroa, when the colony is threatened is called critical level. This number varies with different authors, generally is stated to be around 2000-3000 mites in hive. For a beekeeper it is clear that it cannot be a fixed number. Some literature indicates it is 10% or 7% of mites to the number of bees. Having the Varroa Terminator device and knowing how and when to use it, it is possible to keep varroa infestation low and not even get close to the critical level. It allows us to reach a sustainable state without chemicals and harvest quality honey and other products.

<http://www.hivet.sk/en/varroaza> **FaLang translation system by Faboba**

1st Trial on Hives at Ochran - Apiary Manager Report We have eight viable hives at present, honey has been taken off and 2nd Apiguard administered to all but two hives. Hivet wasn't a good fit as hive dimensions must have got scrambled in translation! Gaps were successfully blocked with tape and the unit run for four hours, the first hour to arrive at the desired temperature and the next three to kill the varroa mites. Maintaining 40 degrees didn't appear to be straight forward and the internal temperature reached 44 degrees just before switch off, this was a cause for concern as we do not know what harm this will have caused the brood. The bees were clustered on the outside of the brood box, very calm and quite damp. The varroa drop count was approximately 350, there were a few dead larvae about 6 dead bees and one wax moth grub on the lower floor. The equipment costs £300 but is on loan to the association for the trial and we will be writing a report for the supplier, it does require mains electricity to run so at the Ochran Farm Apiary we have used a generator, kindly on loan from Russ Flynn. An inspection of the brood will be undertaken before we reach any conclusions. **Second session on Sunday 14th September, 2.00pm Miriam Knight**



The AGM will be upon us soon and nominations will be taken for some committee roles.

GBKA Committee 2014

Role	Name	Phone	Email
President	Nicola Bradbear		
Chair	Eric Long	01633 412617	caeffynnon@tiscali.co.uk
Vice Chair (to be ratified)	Rhiannon Chandler	01873 880736	
Treasurer	Russell Flynn	01495 751536	treasurer@gwentbeekeepers.co.uk
Secretary	William Stewart	01600 740665	secretary@gwentbeekeepers.co.uk
Minutes Secretary	Dianne Jenkins	01495 752827	
Membership Secretary	Clare Bradly	01291 690052	membership@gwentbeekeepers.co.uk
Swarm Liaison Officers	Darren Morgan	07789980000	dsmorgan81@hotmail.com
Ken Key	01873 852512		
Dianne Jenkins	01495 752827		
Apiary Committee -	Eric Long, Janet Bromley, Russell Flynn, Rhiannon Chandler, Miriam Knight		
Beginners' Training Lead Tutor	John Holden	01873 831273	johnholden142@yahoo.co.uk
Exam Secretary	Janet Bromley	01291 690331	bromleyjan@hotmail.com
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Librarian	Eric Long	01633 412617	caeffynnon@tiscali.co.uk

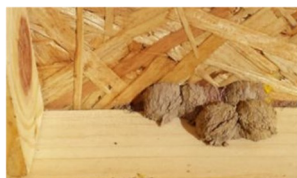
National Honey Show Newsletter August 2014

We look forward to seeing you in Weybridge at this year's show on 30th October to 1st November.

email: nationalhoneyshownews@gmail.com

This year the National Honey Show opens on Thursday morning, 30th October, the Trade Hall opens at 12 noon and the Show Opening Ceremony is at 2pm. The show then continues with lectures and workshops in the afternoon.

Bees Don't Walk on Honey — email from a reader—I have experienced quite large losses of bees when using plastic frame feeders, as the bees appear to be unable to climb back up the plastic sides & the wooden float sinks on the surface of the sugar syrup. I have solved the problem by inserting a sheet of plastic gardening mesh cut to fit the height of the feeder - this provides a framework for the bees to climb back up. At the BBKA spring convention a couple of years ago, I heard someone else make the same complaint about plastic frame feeders and they had solved the problem by gluing a layer of sand to the interior of plastic frame feeders - of course, one would have to be careful that the glue was not harmful to the bees. Frame feeders made of wood do not cause a problem as the surface of the wood is rough enough for the bees to climb up. I only use frame feeders in certain circumstances, as mostly I use contact feeders. The integral feeders of polystyrene nucs also present the same problem, but again garden mesh solves it. *Thanks Angela Maismore Apiaries informed me that their feeder has been modified and recommened a good rub down with coarse sand paper on the inside walls of the older unmodified feeders.*



Who lives here? *There were NO offers from readers! Ans—Solitary bees*

Events and Advertising

National Honey Show: Latest News September 2014 *Thursday 30th October to Saturday 1st November* at St Georges College, Weybridge

1) **Booking for workshops** is now open Our on line booking system can be accessed at

<http://www.honeyshow.co.uk/booking>

If you don't have access to the internet, ask at your local library, most libraries now have internet facilities.

2) **The National Honey Show Schedule** is also now available. Members should have received their copies in the post. It can also be accessed online at:

<http://www.honeyshow.co.uk/files/2014/NATIONAL-HONEY-SHOW-2014-Schedule-Last.pdf>

3) We'll be launching the revised series of **National Honey Show Booklets** in the Exhibition Hall at 2.30pm on Thursday. The revised booklets are:

- Preparation of Liquid Honey & Judging Honey in the Jar
- Mead and Meadmaking
- Wax for Show
- Granulated or Crystallised Honey
- Production and Exhibition of Comb Honey & Comb Honey for Show
- Management, Production and Exhibition of Heather Honey

- The study of Pollen
- Showing Honey Products
- Candles for Show
- History of The National Honey Show

The booklets will be available all three days in the Trade Hall at £3.50 each.

4) National Honey Show Leaflets and Raffle Tickets

If you have a local meeting, county show or other event before the end of October,

please e-mail nationalhoneyshownews@gmail.com and let us know how many of our

latest leaflets, and raffle (in support of the lecture videos) ticket booklets you can

display, and the address to send them to. Thanks.

5) Daily Programme for the Show

Printed copies will be available each day, but can be accessed on line now, and

between now and the Show will be updated regularly with any new information:

Thursday Friday Saturday

<http://www.honeyshow.co.uk/files/2014/Thursday-30th-October-NHS-2014.pdf>

<http://www.honeyshow.co.uk/files/2014/Friday-31st-October-NHS-2014.pdf>

<http://www.honeyshow.co.uk/files/2014/Saturday-1st-November-NHS-2014.pdf>

Look forward to seeing you there!

Buy your Glass Honey Jars from— **Glass Pack Solutions** infi@glasspacksolutions.com

Here is this month's puzzler



What is this?



A Conference for all Beekeepers

- ◆ 26 - 28 September 2014
- ◆ The Pavilion, Llangollen, North Wales
- ◆ Practical and scientific topics
- ◆ Improve your bees and beekeeping
- ◆ Bee breeding and queen rearing techniques
- ◆ Management systems for native and near-native bees
- ◆ Three lecture streams each day
- ◆ 40 UK, Irish and International speakers
- ◆ Local attractions for non-beekeepers
- ◆ Good access by road, rail, ferry and air

Hosted by South Clwyd Beekeepers Association

Programme: www.bibba.com/conference_2014.php

Book now: <http://goo.gl/uCBLf8>



Bees for Development

Local and African HONEY

Bee products, beekeeping bits

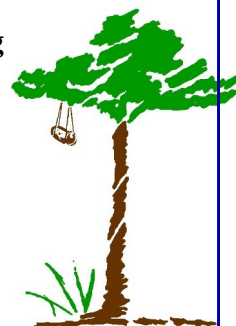
Books CD and videos on beekeeping

Supporting information services for

beekeepers in developing countries

1 Agincourt Square, Monmouth

(next to Shire Hall) 01600 714848



Bee friendly Plants

Over the last century our wildflower meadows have been reduced by up to 97 per cent. The demand for food, technological advances in farming and the use of pesticides have all played their part, creating 'green deserts' – and the effect on our pollinators has been devastating.

They're being pushed to the limits, literally, relying on hedgerows, trees and garden flowers for the nectar and pollen they need.

But it's not all bad news and we can all make small changes that will help our beleaguered bees.

54% of UK towns and cities are greenspace - parks, allotments, sports pitches and so on. Domestic gardens account for another 18%, while woodland covers 12% of the UK. In fact, less than 2% of the UK is designated as 'urban' so there's a lot of space left for plants, we just need to make sure there's more of the right plants.

[National Beekeeping Centre Wales - Forage & bee friendly ...](#)

Trees

If any community group would like some trees, the free community tree packs are available from the Woodland Trust. The current applications close 4th September for delivery in November – there are 3 sizes: hedge packs (30 trees), medium pack (105 trees) and large (420 trees).

The groups need to apply on line and here is the link:

<http://www.woodlandtrust.org.uk/plant-trees/in-your-community/>

Would you mind forwarding to anyone who might be interested?

Many thanks

Andy Richards

Environment Wales Development Officer

07825 055488

Flower of the Month Heather

Ling, *Calluna vulgaris*, is native in Britain and Ireland.

Low-growing, evergreen shrubs requiring acid soil. *Calluna* has minute leaves closely pressed to the shoots and small, usually lavender flowers in summer and early autumn. This species is very variable, and the numerous selected cultivars (cultivated varieties) reflect, indeed exaggerate, this variation. In habit, ling ranges from prostrate, 5 x 45cm (2 x 18in), to erect and spreading 60 x 75cm (24 x 30in). The foliage varies in colour from dark green to bright green, grey, yellow, orange and red, and there are silver-foliaged plants too. The flowering time varies; in the northern part of the distribution it blooms from June to August, whilst in the southern part of the distribution it blooms from August



to November. The white to crimson flowers normally possess a cup-like, four-lobed corolla about, 3mm (1/8in) long, overlapped by four sepals of similar size and colour.

GBKA publicity~ and Shows

Please send replies, letters and Newsletter contributions to
Newsletter@gwentbeekeepers.co.uk



GBKA promoted beekeeping at Llanthony Valley and District show with the help of some very industrious live bees. By late afternoon Russell and I were beginning to feel quite sorry for a couple of house keeping bees who had spent all day walking round with a wax moth and a wax moth larvae trying to find the door to throw them out! The oddity of their load drew fascinated onlookers and was a great conversation starter, as a result of their hard work we had twenty five participants at the taster session led by John Holden at Ochran Apiary a few weeks later and an other session booked for 5th October. Many thanks to all the voluntary helpers who popped in to help talk about bees through the day. We have Usk Show on Sat. 13th September, Dianne Jenkins is looking for support in Newport at Tredegar House Monday 15th to Thursday 19th and Abergavenny Festival is very short of support for 20th and 21st. If you are available to drop in even just for an hour or so please contact Russell Flynn. *Miriam Knight*