Montgomeryshire Beekeepers Association

The BeeHolder

Winter-Spring 2024

Observation Hut at Gregynog Apiary

Editorial

Mark Swain's 'winter care of bees' is a comprehensive guide to getting your bees through winter so don't miss it. Laura Magee's account of studying for the BBKA modules will surely bring back memories to those who have undertaken them and for anyone who hasn't. it could very well encourage you to have a go.

In this issue there is much to learn about honey from global concerns to the happy discovery of honeydew honey in our apiary at Gregynog. The apiary's observation hut which is about to be completely refurbished has led to a look at the early days of the apiary and it is a chance to read about Jessica and Dave Bennett. You can follow the story of the observation hut from its creation to the present day in our next issue.

Finally, do note dates for your diary including our Annual Lunch and World Bee Day.

Carolle

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Winter Care of your Bees

A successful winter, resulting in a colony of bees emerging alive and well in the spring, will depend largely on all the preparation you did at the end of the bee-keeping season. The bees should have been well-fed after the honey harvest to replenish sufficient stores to assist them through the winter period. A good colony will need 18kg (40lb) of stores to see them safely through the winter months.

Ideally the colony should enter the winter period with a new queen and a large number of bees. Varroa treatment should have been undertaken to enable the bees the best chance of survival.

Bees are poikilothermic (cold blooded) and like ours their body temperature varies with the surrounding temperature. Within the hive the colony survives by forming a ball or cluster to maintain the temperature at 34C in the centre when brood is present. When brood-less the temperature is much lower but warm enough to allow the bees to remain alive and travel around the hive to consume honey stores.

The cluster consists of a tight outer shell of cold, inactive bees which surrounds a loosely formed ball of warmer active bees and the queen. Heat is generated by the activation of the worker bees flight muscles. As the temperature falls, the cluster becomes tighter, reducing the heat loss from the smaller surface area. The cluster becomes looser as the temperature rises, allowing movement to another area of stores. Bees change positions to “take turns” to form the cold outer shell.

The bees will be in a semi dormant state in their hives, emerging for cleansing flights on the warmer days throughout the winter. If you have varroa floors, the catch trays can be taken out but it is good practice to ensure extra insulation is placed in the roof. Around the middle of January assess the weight of each colony by hefting the side of the hive to ensure the colony has adequate stores and is not in danger of starvation.

An average colony will use 2kg of stores each month, but this will vary depending on the weather. A mild winter means the bees are more active and will therefore consume more stores. If you find any hives that are light you should feed with fondant. This is a simple process simply cut a hole in the plastic bag, fold back the flaps and place over the crown board. Personally I prefer to place the fondant in a used Ferrero Rocher box which has had a hole drilled in the bottom, I find that the bees find it easier. It is not advisable to give sugar syrup too soon as this tends to break up the brood nest. Although a number of bee-keepers have reported giving syrup to their colonies during February without any detrimental effects. The action of hefting the hives should also be repeated in mid-February and March. On warmer days, you may witness the bees flying, resist any temptation to open the hives until the spring when the ambient temperature is 14C or greater, otherwise you may risk any existing brood.

Winter is also a good time to relocate any hives that you consider to be in the wrong position without having to move them 3 miles. Preferably choose a cold period when the bees are not flying and move them gently to their new location.

Other Tasks to consider during the winter months.

- Clean and repair any clothing.
- De-gunk your smoker, scrape and flame hive tools.
- Check for wax month and treat if necessary if storing the supers dry.
- Ensure all equipment is clean and in good condition for the next season.
- Go through your records/notebook, see what worked and what did not.

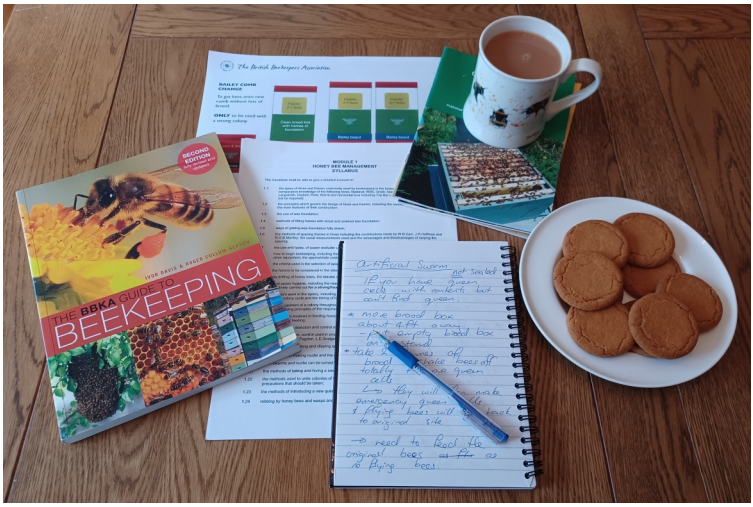
(The above information has been sourced from the Welsh Beekeeper magazines)

Mark Swain

A BBKA Module Journey

I'm not entirely sure exactly how we got onto studying for the BBKA Modules, I remember casually talking about it with Rachel and then swiftly found myself with Simon, Joy, Karen, Jill, George and Paul in a study group with a training schedule mapped out over the upcoming months for Module 1 (Honeybee Management)!

The programme of study is broad and covered all the basics of beekeeping and seems, at first, quite daunting. Who knew there were so many types of beehives! We were also all slightly apprehensive at the thought of taking an actual exam (it being several decades since most of us had sat one!)



Forming a study group was invaluable. We met on a regular basis, every couple of weeks, which made it a fun, supportive way to learn - with the bonus that Jill is a keen (and exceptionally good) biscuit baker!

We split the study topics into bite size chunks and spent time going through previous exam papers. In parallel, the group also signed up for the associated correspondence course. It helped to have an enthusiastic, knowledgeable, and supportive training officer in Rachel, combined with numerous reference books and online resources.

The exam itself was available to be taken in-person or online which was great as candidates could chose an option to suit them. Most of the group had preference for an in-person exam to avoid faltering rural broadband and to have the comfort of a paper and their scribblings in front of them.

Paul, who sat the exam online noted: It was easy to download the software for the online exam, all loaded and tested in about 20 minutes, also great to be able to do a test paper online to prepare. On the day I was able to choose my own exam start time between 09:30 and 11:50 and because I didn't travel, I had extra time to read before the exam started.

Reflecting on our studying journey, we all realised how much we've learned over the time and how much more confident we are. It was also an opportunity to get to know members of the Association better, support each other and have fun at the same time: to which extent we found ourselves missing the study sessions and a number of us launched onto Module 3 (Honeybee Diseases, Pest & Poisoning) later in the year!

I am proud to say that those who took the exams (some unable due to work commitments and Covid!) all passed, a huge testament to Monty Bees training process too and efforts from all members who help with training and mentoring.

What would we say to anyone thinking about taking a module? It's a great way to develop your skills for the benefit of your bees.

There are two exam slots in the year March and November, and we found it an ideal way to keep occupied during the winter months when you've a bit more time on your hands. If you can get a couple or more of you to work together and learn over a few months, it makes it easier and more fun – especially if you have someone that bakes!

Laura Magee

Honeydew Honey at our MBKA Apiary!

I caught up with Rachel Kellaway after she was thrilled to discover honeydew honey last autumn at our apiary located in the grounds of Gregynog Hall. How did Rachel know it was honeydew honey?

After the fabulous spring and the bees working really hard there was an opportunity to take some honey off. When the honey spun out Rachel couldn't believe the rich, dark colour. Like nothing she had ever extracted before. It tasted like toffee!

How did she know it was special?

Honeydew honey doesn't come from nectar like more traditional floral honey does, rather it comes from plant-sucking insects like aphids. The aphids tap into high sap-producing trees such as pine, oak and willow and the sap they consume goes through their digestive system. A bead of sugar solution (honeydew) is then excreted from the aphid's abdomen and flicked off onto a leaf. Because the honeydew is sweet and sticky with a very high sugar content it attracts the honey bees who collect it into their honey crops and then return to their hives for processing in the usual way. Because it has been through the digestive system of an aphid, and comes from a plant, there are different sugars and different enzymes in there. Generally, the properties of honeydew honey are very different. It does crystallise and can contain 20% water like floral nectar honey at 18% water. Appropriately it is also called tree honey or forest honey.

Rachel said "I've never come across this before as we've never had a spring crop of honey at the association apiary. Gregynog Is full of trees and if you've every left your car under a sycamore, for example, it will have little sticky spots on it …

that is honeydew!"

Rachel Buckley

Egypt

The honeybee was a favoured insect by the ancient Egyptians. It was used as a symbol of Kingship and appeared in ancient texts and tomb monuments. It was also linked to several major gods and was mentioned in the Pyramid texts and Egyptian Mythology. Honey was included in several religious rituals, presented as offerings not only to the gods but used in many aspects of their lives. Historical evidence today believe that the ancient Egyptians were the first to practice beekeeping in history.

Laura MaGee

Drones - unappreciated heroes

Many of us tend to see drones as lazy bees who loiter in the hive, not contributing to the workload necessary for the health and well-being of the colony. If they succeed in mating with a virgin queen, they die. If they are unsuccessful in their “raison d’etre”, they are dumped out of the hive by the workers in autumn to die.

Monty Bees enjoyed a fascinating presentation by Master Beekeeper Lynfa Davies at the December meeting, which gave us an appreciation of the importance of drones. Some interesting facts: Drones are haploid so they only have 16 chromosomes instead of the 32 found in the cells of the queen and workers.They can fly at speeds of 12 to 15 mph.If they are successful in catching a virgin queen, they deposit 6 to 12 million spermatozoa in her genital orifice.The queen usually mates with between 12 and 14 drones but can mate with up to 77 drones. Out of all the matings, only about 2 to 7 million sperm are stored for her lifespan. Drones have powerful eyesight and can see a virgin queen 50 metres away. They have between 15 and 16,000 sensors on their antennae, compared to 2,600 on the antennae of workers and 1,600 in queens.

Jill Hills

World Bee Day 2024

We are looking for volunteers on this, our second World Bee Day event at Gregynog on May 19th. We need volunteers to man our stands and help supervise the honey tasting, children's activities, and the sale of all bee related goodies including knitted bees. We will also be selling a wide range of plants and seeds for pollinators and again, if you have any spare plants or seeds they would be very welcome.

So, if you can help do get in touch with me or any member of the committee and if you can knit a bee or donate a jar of honey for the honey tasting that would be very welcome too. Come along anyway for last year proved to be a grand day out for children and adults alike.

Jill McAloon

Bee friendly plants were popular at our World Bee Day event last year. If you fancy growing some for this year, it'll soon be time to get sowing seeeds

All 100 bees that we knitted last year were snapped up. Can you help us reach a target of 100 this year. We can supply the pattern.

Some of the beautifully packaged bee bombs donated by a member of MBKA

When Manuka honey isn't Manuka honey

Manuka honey is expensive but is popular with consumers for its apparent health benefits. According to the Unique Manuka Factor Honey Association (UMFHA), these include aiding wound healing, soothing sore throats, promoting gut, lung and skin health, antibiotic resistance and even alleviating the side effects of chemotherapy. UMFHA upholds the identification of true Manuka honey-i.e. honey produced by honeybees foraging on the Leptospermum Scoparium bush in New Zealand and Australia.

UMFHA used a certified independent laboratory to analyse 46 brands of "Manuka honey" available in the USA and UK. All of them were found not to have originated from New Zealand. None of them contained the key MPI1 markers with 80% of them not containing any Leptospermum DNA. 82% failed the CODEX quality requirement of <40mg/kg HMF, 60% failed the 4-HPLA test and 30% failed the potency label claim.

The UMFHA requires that the honey contains leptosporin and methylglyoxal, and that the label includes "Produce of New Zealand" to meet its quality standard. It notes that the consumer purchases Manuka honey for its health benefits but if it is not from New Zealand, they are not receiving those benefits.

Events

18th March after last year's success our popular quiz and honey show is returning. Be prepared for some challenging questions set by quiz master Simon Anderson

22nd April Are you prepared for the Asian Hornet? Rachel Kellaway is going to give an update on theAsian Hornet with the latest advice and demonstration of a range of Asian Hornet traps

meetings take place at 7.00 pm in Plas Dolerw, Newtown

Flowering Trees and Shrubs

To the compound eye of a bee a blossoming tree must be as alluring as a traditional sweet shop with its jars of pear drops and humbugs, lemon sherbets and toffee. Here is an entire nectar rich emporium with its wares only a wing beat apart. It goes without saying that anyone wanting to attract bees should think about planting winter flowering trees and shrubs and at the tail end of winter it is the myrobalan plum that covers its branches with fragile flowers.

For many years before it succumbed to a gale the myrobalan plum at the bottom of the orchard would break into blossom in February flowering on into March. I could hear the buzz of the bees before the tree came into view. This is the earliest of the orchard trees beating the earliest apple by two months and other plums including damsons by at least a month.

myrobalan plum

Prunus cerasifera to give its Latin name is also known as the cherry plum and is as near as we get to a wild plum for it is native of South-East Europe and Asia but has been naturalised here for centuries. If you are tempted then you might look out for Prunus cerasifera ‘nigra’ which bears dark purple foliage and pink flowers. It’s no surprise that this ornamental small tree has the R.H.S. seal of approval with an Award of Garden Merit.

Another ‘sweetie’ that is irresistible in the dark days of winter is the witch hazel pictured here. Is this the sherbet lemon of the plant world?

It could be although its scent owes more to spices than lemons but the colour is right. Even on the darkest winter day it glows like a beacon with its curious, ribbon like petals and on warm, sunny days the scent wafts through the air advertising the nectar and pollen rich goods to be had.

Hamamelis mollis

Hamamelis mollis, which is the most heavily scented of all, comes from China. It bears showy yellow flowers as does H. japonica from Japan. Together they have produced a series of hybrids such as H. ‘Arnold Promise’ and H. ‘Pallida’ which can be found in most garden centres. These are all worth a place in your garden although they do require a free draining soil that is neutral or, better still, on the acidic side. All witch hazels, regardless of where they are native, grow naturally at the edge of a forest as woodland dwellers which means that they require protection from strong winds.

These are tall shrubs that are to be coveted and saved up for because they aren’t cheap. They are grafted onto the more vigorous H. virginiana, the North American shrub with similar but more modest flowers in late autumn. It is overshadowed by its more showy cousins and you must hunt it down in obscure nurseries. Worth hunting? Any bees foraging in Autumn would think so.

Carolle Doyle

Bees in the News

Neonicotinoids……Again

A spokesperson for the Dept of Environment, Food and Rural Affairs confirmed in December that it had received an application to use Cruiser SB on the 2024 sugar beet crop. Cruiser SB is a neonicotinoid pesticide and despite being banned by the EU, it has been used in the UK every year since 2017 for “emergency use”.

A group of businesses which depend on pollinators has told the government this product should be banned. The businesses include Neal’s Yard Remedies, Yeo Valley, Lush and The Body Shop. They note that one teaspoon of neonicotinoid can kill 1.25 billion bees. A third of the UK bee population has been lost in the last decade with 13 species of bee being lost since 1900.

Unfortunately for pollinators, sugar beet has one of the highest profit margins of all the crops grown in the UK. This profit is at risk from viruses spread by aphids so there is a big incentive to use seeds treated with Cruiser SB to destroy them.

Pesticides continue to pollute UK rivers

Research by the Rivers Trust and Wildlife and Countryside Link (WCL) has found that one or more of 5 neonicotinoids were found in 29 of the 283 sites tested by the Environment Agency in English rivers. Just over half of the 29 sites had one or more neonicotinoids above the EU proposed environmental quality standard (the level below which it is assumed to be safe for aquatic wildlife). 21% had one or more toxic pesticide at over 4 times the safe level. The worst affected rivers were the Ivel, Waveney, Neme, Ouse and Teme. Rivers in Wales were not tested.

Since leaving the EU, the UK can make its own decisions about use of pesticides and currently 36 of the chemicals banned in the EU are still not banned in the UK. The neonicotinoid thiamethoxam was approved by the government again earlier this year for “emergency use” treatment of sugar beet seed.

Disappearing honey

Scientists have been investigating why honey yields are declining in the US. Although overall honey production is stable, it only remains so because of a rise in the number of beekeepers and colonies managed across the country. At an individual level, honey yields per colony have dropped by about 1/2lb.

A number of causes have been identified. There has been a dramatic increase in the use of herbicides resulting in flower-rich meadows being converted to monocultural farmland. There has also been a decline in soil productivity. Climate change since the 1990s has resulted in warmer and wetter weather with more frequent extreme weather events.

Winter losses have increased. A survey by The Bee Informed Partnership (https: beeinformed.org) completed by 3,006 beekeepers responsible for 314,360 colonies showed 37.4% of colonies were lost between 1st October 2022 to 1st April 2023. The main cause was varroa, but adverse weather, starvation and queen issues were other important reasons.

A new drug in the fight against the varroa mite

Scientists at Louisiana State University have been investigating how to reduce the impact of the varroa mite on honeybees, in particular the transfer of viruses. After 2 years and $0.5 million, they have identified pilocidil which improves honeybee immunity, reduces viral infections, and increases honeybee colony survival. The project was joint funded by the United States Department of Agriculture and the National Institute of Food and Agriculture, probably motivated by the huge losses of honeybee colonies every year in the USA (40% last year). Mobile units of honeybee colonies are used to pollinate a variety of crops, such as almond orchards, across the country and are big business.

The details of how the drug works via reactive oxidative species and KATP channels are available in Virology Journal for the scientists amongst you.

Honeybees and Phantom Decoys

Apparently, when shopping, human beings make predictable second choices if they find the item they want is not available. This trait can be manipulated by using the unavailable item to get shoppers to purchase certain other products. The unavailable item is called a “phantom decoy.”

Researchers investigated whether honeybees were also susceptible to the influence of “phantom decoys”. The bees were trained to enter a box which contained 3 artificial flowers which varied in quantity of nectar and ease of accessibility to it. One flower had a poor source of nectar but easy access to it, the second flower had a good source of nectar but was difficult to access, and the third flower had a good source of nectar with easy access. Unsurprisingly, the bees soon settled for the third flower with the easily accessible good source of nectar.

The third flower was then adjusted to contain no nectar but still have easy access. Unlike a human being who, for example, finds there is no chocolate ice-cream (the phantom decoy) then chooses strawberry instead, the bees did not then choose another of the flowers. After moving between the flowers for a while, they left all three flowers alone.The conclusion was that honeybees are not susceptible to phantom decoys, and this may have implications for pollination success. Empty flowers may increase the movement of pollinators in a patch of flowers, and thereby increasing the movement of pollen between them.

Australia accepts its varroa mite fate

After 14 months, $100 million, and the destruction of 14,000 honeybee colonies, scientists have accepted that it is impossible to totally eradicate the newly introduced varroa mite. It was first detected near Newcastle but attempts to stop its spread have failed. Beekeepers will now need to learn how to live with varroa.

Bees need a varied diet

Scientists from the Entomology department at the US Dept of Agricultural Research Service investigated which plants honeybees and bumble bees visited during the height of the blueberry bush flowering season. The team collected pollen from colonies in 14 apiaries based in blueberry farms using a 10-frame pollen trap. They also collected pollen from bumble bee colonies in the same areas.

Despite a glut of pollen available from the nearby blueberry bushes, both types of bees collected a variety of pollen from other sources, with blueberry less dominant than other plants such as common buckthorn and willow. Bumble bees collected pollen from a wider range of plant species (29) than honeybees (21). The protein content of blueberry pollen is only 13.9%, insufficient to sustain a honeybee colony. Bees appear to forage for more nutritious pollen even if they must travel further to find it. However, in a monoculture landscape, travelling further to find better pollen can reduce brood production due to the energy used to do so.

Poor state of honeybees in Switzerland

Bee specialist Peter Neumann has warned that all honeybee colonies in Switzerland could be dead in the next couple of years as they succumb to the varroa mite and the viruses it transmits. He recommends the dissemination of better information to beekeepers and the general public, the development of protection measures for all bees, a sustainable strategy against varroa, and a ban on insecticides and pesticides. Another looming concern is a rapid spread of the Asian Hornet across Switzerland in 2023.

In The Frame - Dave & Jessica Bennett

The observation hut at our apiary in Gregynog is about to be refurbished so what better time to turn the spotlight on Dave Bennett, the Apiary's first manager and his wife, Jessica.

Before returning to 2010 which found Dave pouring concrete for the base at the newly created apiary in the grounds of Gregynog Hall and Jessica laminating her photographs to furnish the hut let's turn back a few more years when a friend of Jessica's whose father kept bees on Long Mountain invited them to come along to Churchstoke for one of Montgomeryshire Beekeepers' open hive days. They drank tea, ate cake and 'looked at bees in a box.' It was pretty cool and then a thought popped into Dave's head, surely they could keep bees in a box in their garden? So they joined the Association in 2007 and Jessica found herself on the committee as Secretary whilst Dave became Apiary manager.

Apiary visit to Churchstoke

The membership may have been small, around half of what it is now, but the ambition was big. It was decided that an observation hut would give visitors an insight into the life of bees and workings of an apiary and at the same time Monty Bees would go all out to recruit more members. By one of those fortunate connections that crop up in the world of beekeeping, Tony Shaw met one of the directors of Tregynon Welsh Oak whose father had kept bees and the company was instrumental in creating the observation hut.

With her photographer's hat on, Jessica had taken many superbly detailed images of the life cycle of a bee and the workings of the hive and these were magnified into poster sized pictures and laminated so that visitors could marvel at the daily life of the colonies that now

inhabited the new Association apiary. As manager, Dave was busy enlarging the number of hives so that the apiary could expand its teaching curriculum. It had been set up to show the different types of hive including a Warre and a WBC as well as the Nationals. Dave concentrated on buying more Nationals so that some colonies would not be intensively inspected as part of the teaching programme and would produce more honey.

Both Jessica and Dave were involved in recruitment. Jessica gave talks to institutes in village halls and to children in local schools. Dave, together with other volunteers, met the general public at shows where they took along Jessica's photographs, the glass 'observation hive' and plenty of information for their displays. The agricultural shows plus Glansevern's Food Festival took place throughout the country and on one occasion, Monty Bees even made an appearance the Shrewsbury Flower Show.

Thanks to these efforts in recruiting membership rose and Dave reckons they had around 130 members which, in its turn, increased the demands on the apiary to furnish more hives for teaching purposes. Dave mentioned that John Bevin, a bee inspector from Ruthin was one of the regulars who put a lot of effort into teaching.

With their own colonies multiplying the Bennetts took a back seat and nowadays although they still keep bees it is purely out of interest and if there is any excess honey at the end of the season it is a bonus rather than the main focus of their attention. Dave says 'always remember that the colony is wild even though it may live in a box in your garden.'

Carolle Doyle

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Please feel free to contact any member of the committee with any questions, or if you can volunteer time to help with any aspect of the association.

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