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WBKA

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Cover: Peter Bezkorowajnyj

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Editorial

Welcome to the spring edition of the Welsh Beekeeper; it's time to prepare for a new season of beekeeping. 'Preparation' needn't be all hard work. It's also time to think about the social side of beekeeping and register for the WBKA Spring Convention in March (page 20), the BBKA Convention (page 29) and think about preparing for the honey shows that are held locally and nationally. Daniel Baxter, our RBI, reminds us to be vigilant for pests and diseases given that the incidence of EFB in Wales was high last year and the threat from the yellow legged hornet is growing. If you haven't already registered with the NBU, now is the time to do so and take advantage of their early warning system for disease outbreaks in your area.

Paul Pearce discusses what we need to do about the yellow legged hornet and urges vigilance, whilst Barry Griffiths considers the threat to biodiversity. Back to basics and Jill Hill summarizes the tasks we need to do over the next few months, while Lynfa Davies describes the different methods of replacing old comb to make sure that the disease challenge to our bees is limited. The Hudsons ask us to think about why our bees cluster, Victoria Davies wonders why the bees reject her water supplies, and Wally Shaw takes us back to gentler times when so little was known about bees. Enjoy your bees, and should you feel the urge to write a letter or article, I'd be delighted to hear from you.

Offer to steward on the WBKA stand at the RWAS summer show

July 20th to 23rd 2026 .

Contact: convention@wbka.com

News Items from the WBKA

WBKA AGM 7th March 2026: will be held at Y Plas, Machynlleth and there will be the opportunity for members to join the meeting virtually as well as being present in person. At the meeting Wendy York, who was co-opted as a Trustee in April 2025, will be seeking formal election as a WBKA Trustee. The meeting will also be asked to amend the Constitution to clarify the membership rules of the WBKA. The AGM will be followed by the March meeting of the WBKA Council to which all the Member Associations are invited to send representatives.

WBKA Trustees: at the AGM we will say goodbye to John Bowles who has decided to retire as a WBKA Trustee. John has been a Trustee since the 2014 AGM and has served as both Chair and President of the WBKA. John has also taken on other roles, namely Insurance and Invasive Non-Native Species Officer, as well as chairing the WBKA Administration and Support committee. We thank John for all that he has done for the WBKA and wish him well in his future endeavours.

Help Needed with Young Beekeepers: Young beekeepers are the future, so the Management Team is looking to recruit a new Trustee who can help us develop a Young Beekeepers Programme in conjunction with local Associations. This would also involve getting involved with the International Meeting of Young Beekeepers. Interested? Please get in touch with either Jenny Shaw (Secretary) or Selwyn Runnett (Chair) who can talk you through what would be involved.

Association Membership: it is a requirement that each WBKA Member Association pays an annual capitation to the WBKA based on the number of its beekeeping members. To comply with this rule all members of an association that are entitled to vote on association matters must be either a Registered, Partner, Country or Junior Member of that association. Local Members are classed as associate members and as such do not take part in either beekeeping or association activities such as committees, events team, trainer, apiary manager, etc. Beekeepers who are a Registered or Partner Member of one WBKA Member Association may join a second Member Association as a Local Member but the same terms regarding involvement in that Association's activities will apply to them. Beekeepers, who are members of an association not affiliated to the WBKA, will need to become a registered member if they wish to join a WBKA Member Association.

WBKA Practical Assessments 2026: The WBKA offers Members the following practical assessments: Junior and Basic Husbandry Assessments and the Honey Bee Health Certificate. More information and entry forms can be found on the WBKA website and the closing date for applications for WBKA assessments in 2026 is April 1st, 2026.

The BBKA Pulls Out of UK Beekeeping Body: CONBA-UK is the body that represents all the national representative beekeeping organisations within the UK, i.e. the WBKA, the Scottish BKA, the Ulster BKA, the Bee Farmers' Association and, of the course the BBKA (our colleagues who represent amateur beekeepers in England). In January, the BBKA's Trustees decided to withdraw from membership of CONBA-UK. It would appear that the main reason for the BBKA being a member was to potentially participate in a future UK bid to host the Apimondia Congress. That is not now a realistic prospect until the mid-2030s at the earliest. Although CONBA-UK exists to promote co-operation and joint working on a range of relevant interests and concerns, the BBKA has, nonetheless, decided to leave. Leigh Sidaway, General Manager of the BBKA stated that: "Whilst the Trustees value meeting with the representatives of the different beekeeping groups to exchange ideas and work together on common aims, it is felt that this could be better achieved by establishing periodic discussion forums for chairs/presidents of the national groups." WBKA Chair, Selwyn Runnett, commented: "The decision by the BBKA is difficult to understand and we very much regret it. Whilst our aim in Wales is to continue to try to work with the BBKA on a range of issues, its decision will undoubtedly make co-operation and joint working within the UK more difficult in the future. CONBA-UK already has a structure to do what the BBKA says it wants to do with periodic

WBKA Events

WBKA AGM & Council meeting 7th March

WBKA Convention: March 28th at Royal Welsh Showground, Llanelwedd

Tickets £8 in advance, £10 on the door. See pages 20 - 21 for more details.

RWAS Summer Show: 20th - 23rd July

Stewards are needed at all the above shows. Please contact the events secretary to volunteer and gain free admission:

convention@wbka.com

Closing Dates

WBKA Basic & Junior Assessments 1st April

WBKA Bee Health Certificate 1st April

discussion forums. Given the threat of the Yellow-Legged Hornet (YLH) and *Tropilaelaps*, now is the time for everyone to work more closely together, not split apart." At a Special CONBA-UK Council Meeting held on 23rd January it was agreed that CONBA-UK would not only continue its work but seek to strengthen the ties between its members on a range of issues, including YLH.

Yellow-Legged Hornet (YLH): Unfortunately, on January 20th we received the news we all feared through a Welsh Government Press Release. A dead nest of a yellow-legged hornet (YLH) was found near Wrexham. This is, therefore, the first official finding of yellow-legged hornets here in Wales. The WBKA notified all its members on the afternoon of the 20th, reiterating that we have been working hard during 2025 on our contingency plans for this eventuality. We have finalised our YLH Strategy, we have a YLH Coordinators Group in place, the WBKA's Trustees have discussed the issue in detail and agreed a set of actions, and we are preparing both advice and training materials to help our members with the threat that we now face. Particular thanks go to our Trustees, John Bowles and Paul Pearce, who have spent a considerable amount of time leading our initiative to prepare for the YLH. It was already one of our top priorities, and so we are in a good position to provide appropriate advice, help, and support.

YLH Briefings and Workshops and Co-ordinators Meetings: We have been involved in a series of Briefings and Workshops across the Country, usually in co-operation with local Associations. Of particular note was the half-day Workshop held in Newtown organised jointly by the Montgomeryshire, Brecon & Radnor, and Aberystwyth Associations. We are planning to hold further Workshops based on this very successful model. Our YLH Co-ordinators Committee is continuing its work with almost all Associations now represented. We are looking at how to improve coordination between associations and build a closer working relationship with both the NBU and the Welsh Government. Beekeepers attending the WBKA Convention on 28th March can attend a free YLH workshop that will be repeated during the day.

Consultation Meetings with Associations About the Future: We are currently in the middle of our series of meetings with Associations asking their views on our Strategic Review. The discussions are already beginning to shape how the WBKA will work in the future in order to reflect the views and priorities of our members. Thank you to all who've participated so far. We hope to conclude the process by the end of April. After that, the Trustees will carefully consider all the feedback and the issues raised. This will then feed into a fresh vision, new strategic priorities, and new or revised programmes and projects, which will take us forward into the future.

Congratulations: to Dafydd Pett who won the BBC Young Countryside Champion Award for 2025. See the winter edition of the Welsh Beekeeper (page 12) for more information about Dafydd and his activities. You can also watch his interview as a finalist on Countryfile, November 9th, 2025 on iplayer. https://tinyurl.com/wynvsde2

Animal & Plant Health Agency | Asiantaeth Iechyd Anifeiliaid a Phlanhigion

National Bee Unit
Welsh Annual Review of the 2025 season

Daniel Baxter, Regional Bee Inspector

Keep an eye on colony health and call your SBI if you suspect any problems.

Weather and Honey Yields

The 2025 beekeeping season across Wales was one of significant variability in weather conditions, in some areas an early warm spring allowed for swift colony build up whilst in other regions variable weather limited forage availability, and honey yields varied across Wales. For the most part however, spring arrived early and quickly, with an unusual absence of rainfall until late summer. As ever, each season creates varying challenges for both beekeepers and colonies.

Event & Show attendance

The NBU Bee Health Days continue to play a vital educational role, offering essential knowledge sharing opportunities to strengthen disease recognition across Wales. It was lovely to meet so many at these events.

It is always a pleasure to meet you at events and our annual attendance at the WBKA Convention in March and the RWAS Royal Welsh Show in July always prove successful. I enjoy the excellent conversations and knowledge sharing discussions and look to increase our presence at local events during this season.

The NBU team in Wales.

Throughout a busy 2025, the Seasonal Bee Inspectors collaborated extensively across counties, supporting routine foulbrood and sentinel apiary inspections, disease identification days and workshops, and a remarkably busy response to the Yellow Legged Hornet (YLH).

Please remember that during April to October, you can use the postcode search on the contacts page of BeeBase to check for the contact details of your local Seasonal Bee Inspector (SBI). Outside of these months please direct all enquiries to me as the RBI at: Daniel Baxter 07771 038646 or email daniel.baxter@apha.gov.uk.

National bee unit website and registration

The National Bee unit website www.nationalbeeunit.com has up-to-date educational videos, factsheets and detailed booklets and training resources available to read and download for both the new and experienced beekeeper.

Please register if you have not done so. Registration is free, and all data is confidential. Registration allows you to receive notifications of disease outbreaks in your area (including YLH incursions) and ensure disease outbreaks are dealt with swiftly and with maximum effect.

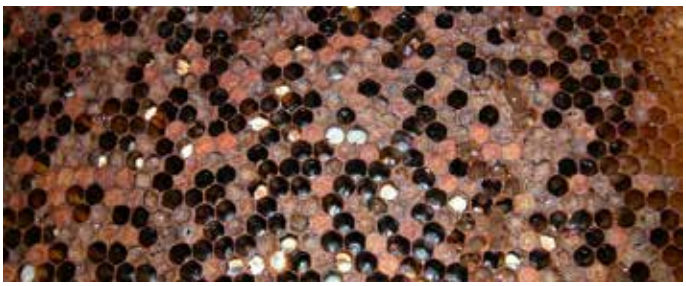
Register at: www.nationalbeeunit.com or directly with the NBU office on 0300 3030094 or nbu@apha.gov.uk. Alternatively contact me or your Seasonal Bee Inspector (April-October).

Disease and Pests

American Foulbrood (AFB) - *Paenibacillus larvae*

Four cases of AFB across two areas were detected in Wales during the 2025 season, remaining consistent year on year. Although this may seem low it remains vitally important that you ensure that the signs of this foulbrood

are recognizable to you as a beekeeper, and that you maintain high levels of apiary hygiene to reduce cross contamination and minimize the spread of infection,



Above: American Foulbrood showing sealed cells - sunken often dark and greasy looking. Perforated cappings. Patchy brood pattern, hard unremovable dark scale at base of the cell at later stages.
Below: European Foulbrood (EFB) - showing melted, discoloured, slumped, distorted and twisted larvae.

Photos: Courtesy of The Animal and Plant Health Agency, Crown Copyright.

European Foulbrood (EFB) - *Melissococcus plutonius*

EFB continues to be prevalent in our region and 108 colonies tested positive for EFB in thirty-six apiaries in Wales during 2025, the highest figure in ten years. Please take proper precautions when collecting swarms and buying bees or used beekeeping equipment from unknown sources. I cannot stress enough the importance of good apiary hygiene and biosecurity measures required to minimize the risk of spreading EFB throughout your colonies.

Always hive swarms on fresh undrawn foundation and do not feed for 48 hours so that the bees can empty their crop (honey stomachs) of any nectar that may contain bacteria, ideally quarantine the colony in an isolation apiary and observe its brood development across at least two brood cycles to ensure good healthy larvae are present. Contact the NBU if anything suspicious causes concern.

Attendance at your local Bee Health Day is a highly effective way of refreshing your disease identification skills with real-life samples of AFB & EFB for you to examine (it is better than looking at a book!).

Further details on the distribution of disease can be found on the Disease Incidence pages of BeeBase at www.nationalbeeunit.com and you can learn more about bee health at:
https://mentera.cymru/healthy-bees-academy/

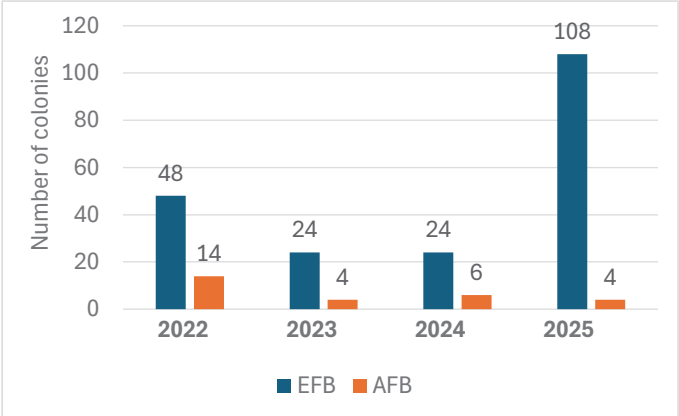


Figure 1. Trends in the numbers of colonies affected by American (AFB) and European (EFB) Foulbrood

Varroa

Varroa destructor and its effects remain the single biggest threat to the health of honeybee colonies in the UK at present. Inspectors are regularly called out to check colonies with either suspected disease or colony loss only to discover hives with extensive damage caused by these invasive parasitic mites or to find that they are the reason for the colony loss.

To maintain strong, productive, and healthy colonies, the NBU advice is to appropriately monitor and control *Varroa* levels – either using biotechnical or authorised chemical products. It is important to adhere to the manufacturer's instructions in terms of correct adherence, specifically dosage, length of application and other environmental factors affecting efficacy (e.g., temperature).

As well as directly parasitizing bees, *Varroa* acts as vector for a host of harmful viruses, which reduce the longevity of the adult bees and thus act detrimentally on the colony

size, strength, and capacity to forage effectively. *Varroa* also causes stress and weakness in the colony leading to susceptibility to other diseases. As mentioned, mortality is commonly discovered in winter or early spring often because of late/lack of treatment as winter bees are produced in the autumn.

A list of the products currently authorised for use in honey bees can be found on the VMD's Product Information Database. To find veterinary medicines relating to bees, filter 'Honeybees' in the 'Species' section and click 'Run Search' at the bottom of the page. Each authorised product will have a link to their Summary of Product Characteristics (SPC), explicitly laying out the authorised conditions of its use.

It is a legal requirement to record anything added into a beehive which forms part of a treatment and to keep this record for five years. A copy of the VMD record card can be found here: https://tinyurl.com/36yepje7.

Yellow Legged Hornet

The yellow-legged hornet (*Vespa velutina nigrithorax* also known as Asian hornet) is not native to the UK. It comes from Asia and was first seen in France in 2004.

Since then, it has spread and has been found in many European countries including Spain, Belgium, Portugal, Italy, Switzerland, and Germany.

The yellow-legged hornet poses a risk to honey bees and pollinating insects, which is why we ask for vigilance around sightings of them in Wales, and ask for suspected sightings to be reported.

The yellow-legged hornet was first sighted in England in 2016 and action has been taken every year since to find and destroy nests.

Using the identification guide will help distinguish yellow-legged hornets from similar looking native insects. By learning what the yellow-legged hornet looks like and reporting any sightings, members of the public can help to prevent this invasive insect from spreading.

While the yellow-legged hornet queens hibernate over winter, the insect is active from February to November

A dead nest of the yellow-legged hornet has been found near Wrexham, in the first confirmed discovery of the insect in Wales.

and most likely to be seen from July onwards.

The Welsh Government has asked the National Bee Unit (part of the Animal and Plant Health Agency) to take action in line with the Asian Hornet Contingency Plan. Deputy First Minister with responsibility for Climate Change and Rural Affairs, Huw Irranca-Davies said: "The National Bee Unit has years of experience tracking and locating yellow-legged hornets so their expertise will be invaluable in helping us to take action against the insect in Wales."

I would like to thank beekeepers and members of the public who I know remain alert and continue to report suspected sightings. We need everyone to become familiar with what yellow-legged hornets look like. As the weather warms up in the spring and especially on into the summer, please continue to be vigilant.

If you suspect you have seen a yellow-legged hornet, you

should report this using the mobile app 'Asian Hornet Watch,' which is available on Apple and Android. Please include a photograph and the location of the sighting with each report. Yellow-legged hornets are not generally aggressive, but care should be taken not to approach or disturb a nest as they will become aggressive if they perceive a threat. For more information, visit: https://tinyurl.com/bdz2vn8z

Please rest assured that we have a very highly trained team of inspectors across Wales who have extensive YLAH experience both in the UK & Jersey covering as far back as 2016. Eradication is still the Welsh government response in dealing with YLH and the current plan for 2026 is still being decided with Welsh government planning and we await their decision on how we will implement these actions as required.

Finally, thank you for your cooperation in improving apiculture and wider pollinator health across Wales; to help facilitate the work we do to keep bees healthy and thriving.

My best wishes for a successful 2026 season.

The WBKA Basic Assessment

Part 2

Ceri Joyner

Prepare for the Basic Assessment.

Are you thinking of taking the WBKA Basic Assessment or helping an association member work towards it? Hopefully, the first article in the 2025 winter magazine and this second article will provide information to help you plan and prepare.

The Basic Assessment is a chance to work towards a foundation level of proficiency in beekeeping. It is enabling in nature and designed to help improve beekeeping standards.

You can take the Basic Assessment if you have kept your own bees for at least 12 months, but it can be taken any time after that in your beekeeping career. To qualify for application, you need to be a member of WBKA.

It is a practical exam, held at an association apiary followed by oral questions. The deadline for application is April 1st.

In the first article I focused on what to expect on the day, the structure of the assessment, and:
Section 1: Manipulation and Beekeeping - Practical

To recap, the assessment consists of four parts, and the candidate must achieve the 50% pass mark in all four parts individually to gain an overall pass. To prepare for this assessment, as with any other, it is essential to work through the syllabus. Begin your preparation by downloading a copy from the website and working through each point as you may get asked a question on anything that is on it.

If you can, work with others and attend your association apiary sessions as often as possible. Some associations will have specific study groups set up to prepare for the Basic Assessment. If this is the case for you, aim to attend. This will be invaluable for your beekeeping and your preparation. For those that don't have this opportunity, make sure you chat with others who have already taken the assessment and ask for help if needed from the experienced beekeepers that you know.

It is important to mention at this stage that there may be manipulations or recognized methods in the syllabus that you do not use in your beekeeping, a good example of this is the treatment of *Varroa*. Point 4.7 of the syllabus states:

"The candidate will be able to describe ways of controlling *Varroa* using Integrated Pest Management techniques"

The definition of Integrated Pest Management (IPM) is "A sustainable strategy to control pests by combining biological, cultural, physical and chemical methods to minimize risks".

If you are in a treatment free area, which in Wales is a possibility, then you may not be in the habit of using chemical treatments on your bees, however, if something is on the syllabus, even if it is not something you practise in your beekeeping, you will need to have an understanding of the detail in order to be able to answer any question you may be asked.

You will need knowledge of what you do as an alternative but also have some basic knowledge of what other recommended options there are. In short, responding to a question from an assessor by saying "I don't know - I don't do that" will not be sufficient. This, like any other assessment, does require you to have knowledge of all parts of the syllabus.

When in the apiary with your assessor, the questions will vary and will often be led by what you see on the comb. It will feel very conversational, but the assessor will be mentally noting what has been discussed and will not ask

Ceri Joyner with Wendy Evans during the Basic Assessment.

you again when you sit down to chat. They will focus on syllabus points that have not been covered or answered.

During the oral your assessor will also help you fully understand what is being asked by repeating or rewording the questions. Feel free to ask for clarification if you don't fully understand what is being asked, so they can reword the question. They want you to do well and they will know that you may be nervous.

Let us look at a quick summary of the remaining sections of the syllabus.

Section 2: Natural History and Beekeeping - Oral and Practical.

The oral section of this section of the syllabus is varied and covers topics such as:

- The three castes and their development.
- How bees pass the winter.
- Local forage, pollen and nectar.
- Clearing honey supers, extraction and bottling honey.
- Apiary set up, the work in the apiary across the year.
- The preparation of sugar syrup and the feeding of bees.

All of this and more are covered in 16 syllabus points.

You will be very familiar with lots of the detail, especially if you have attended a beginners' course, regularly attend association apiary visits or have a mentor.

You will also need to be aware of the NBU site and BeeBase, along with other reliable web-based sources of information.

The practical section of Natural History and Beekeeping is the assembly of a frame. The association will provide all of the components to do this. If you use certain tools at home to complete this task you can bring them with you e.g. nail punch.

This is an easy way to get points. Make sure you practise and ensure your frame is made correctly with 11 pins to secure.

Section 3: Swarming, Swarm Control and Effects - Oral

For this section you will need to be aware of the reasons for swarming and what happens when the bees swarm.

Probably the most important point in this section is that all candidates will be asked to describe a method of swarm control.

The method you decide to describe is up to you. The best advice I can give is to talk about the method that you have experience of. There is no point in learning a 'textbook' method that you have not tried yourself as this will result in more work for you and possible confusion. So, discuss your method and as long as that method works you will be fine.

A point to note is that using a nucleus to split a colony as a swarm control method is acceptable for the Basic Assessment. This has been the case for a few seasons now. Be prepared to be able to explain what happens to the colony whatever method you use and why it works in preventing the colony from swarming.

This section also requires you to know about:

- Queen introduction.
- Catching and hiving a swarm
- The signs of a queenless colony, how to test for it, and the signs of laying workers and drone laying queens.

- You may also be asked about how to unite colonies.

All of this is covered in 7 syllabus points.

Section 4: Disease and Pests - Oral

This section is obviously about Disease and Pests and you will have demonstrated how to check combs for disease and have answered questions about disease at the hive side. However, issues that were not covered will be discussed during the oral section of the exam.

This section requires you know about:

- The reasons for good apiary hygiene.
- The reasons for regular comb replacement.
- How best to store comb and prevent wax moth and how to clean and sterilize wooden and poly hives.
- You will be expected to be able to describe the signs of American Foul Brood, European Foul Brood, Chalkbrood and Sac Brood, the legislation around notifiable diseases and pests, and what to do and who contact if you suspect disease.
- In addition, you will need some basic knowledge of *Acarine* and *Nosema* and their effects on the colony.
- And, as mentioned earlier, the detection and monitoring of ***Varroa***, its effect on the colony and ways of controlling *Varroa* using integrated pest management techniques.

All of this is covered in 12 syllabus points.

You will need to do some reading in addition to making sure you get as much experience in the apiary with other beekeepers. Everybody has different ways of learning and do whatever works for you. I need to make notes to accompany my reading to ensure the facts remain for recall, and repetition is my friend.

I have listed some books that I have found useful over the years. There is a reading list that can also be downloaded for the basic assessment, but it is not exhaustive and as there are so many good books it never will be. You don't need to rush out and buy lots of books. One good general book should provide you with enough information, provided it is not too old.

Colleagues may help you by loaning books and your association may have a library.

Haynes Bee Manual - C & A Waring.
Guide to Bees and Honey - T Hooper.
BBKA Guide to Beekeeping - I Davies & R Cullum-Kenyon.
Notes for New Beekeepers - B Cadmore.
Swarming Biology and Control - Wally Shaw.
The Beekeeping Year - Lynfa Davies.
Healthy Bees are Happy Bees - P Gregory.
Diseases and Pests of Honeybees E Attridge, P Boyle *et al*

There are also many online resources that are very useful. The WBKA and NBU websites are excellent places to start, with lots of downloadable booklets and information. The Healthy Bees Academy is also a very good online learning tool: https://tinyurl.com/46uv9m46.

I hope that these articles about the Basic Assessment will encourage people to consider it, when they previously have not. It is a great thing to do, enjoyable and very rewarding. Hopefully your bees are thriving and like me you are excited for the season of 2026 to start.

Happy beekeeping all.

A quick guide to beekeeping tasks: April to June

Jill Hill

Task	Rationale	Links to useful information
Begin weekly inspections when the weather is warm and dry. Maintain hive records. Update your BeeBase colony record	To assess if the colony is healthy, queen-right, has sufficient stores, enough space for the queen to lay, & look for signs of intention to swarm	"The Beekeeping Year" by Lynfa Davies https://www.nationalbeeunit.com/ for BeeBase
Assess *Varroa* infestation early spring and after the spring honey flow	Enables early treatment, if necessary, before mite population expands & developing bees suffer damage, affecting colony health & survival	"Varroa management" by Kirsty Stainton
Assess stores as the colony increases in size, during episodes of poor weather and during the June gap, and feed with syrup if needed.	Prevent starvation and provide energy for brood rearing activity	https://tinyurl.com/48ccyubw
Set up traps or bait stations for yellow-legged hornets from early April. Monitor regularly and release non-target insects	Enables the swift identification, reporting and destruction of nests, to reduce the risk of the YLH becoming established in the UK	NBU: https://tinyurl.com/2xwa7ecj
Disease inspection at the beginning of the season on a warm day when the bees are flying well	By shaking the bees off each frame, an examination of sealed and unsealed brood can be made to look for AFB and EFB	"Healthy bees are happy bees" by Pam Gregory
Replace old dark comb with foundation when the weather is warm and there is a nectar flow and plenty of young bees in the colony,	Reduces risk of disease and build-up of chemicals and propolis. Bees need warmth and food to produce wax	The Apiary in May in "The Beekeeping Year" by Lynfa Davies https://tinyurl.com/5n6mu2xt
Add supers or another brood box to provide additional space as the colony builds up	To provide room for the queen to lay and for honey storage. Congestion is one of the triggers for a colony to swarm. Pre-emptive swarm control to reduce the initiation of queen cells	https://tinyurl.com/2zte88um
Reactive swarm control measures if queen cells are being made	Reduce the risk of swarming. If the colony swarms, half the colony is lost along with the queen, honey production is much reduced, and the swarm may become a public nuisance	https://tinyurl.com/f9w5e2aj
Extract honey if your bees have been foraging on oil-seed-rape (OSR)	OSR honey to be extracted before it sets in the frames.	https://tinyurl.com/bdcv2h2x
Book your place for the Basic Assessment (by 1st April) or Honey Bee Health Certificate (by 31st May)	Learn more about this fascinating insect and improve your beekeeping skills	https://tinyurl.com/4bza7jar

Can we protect biodiversity against the yellow legged hornet?

Barry Griffiths

We saw the yellow legged hornet in France last September, and this left me very concerned for our native biodiversity as well as for honeybees. The yellow legged hornet feeds on carbs but feeds insect protein to its larvae and a fear is that this predation could push some of our species towards extinction.

We saw bumblebees and the Violet Carpenter bee, and amazing butterfly and plant species. All evidence that France has greater biodiversity than the UK, which is among the most nature-depleted nations on earth.

Differentiating YLH from similar insects like the European Hornet and hover flies can be difficult and we will need to be increasingly observant. The YLH in these photos were not foraging – they were hunting pollinators.

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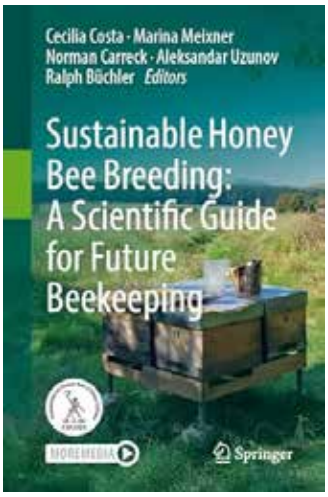


Sustainable Honey Bee Breeding: A Scientific Guide for Future Beekeeping

Cecilia Costa, Marina Meixner, Norman Carreck, Aleksandar Uzunov and Ralph Büchler – Editors

This book has its historical roots in concerns about the growing number of colony losses that were seen in the early 2000's and reports the outcomes of the significant EU research effort that was directed towards this problem. It is a collaborative work by 32 scientists, extension specialists and beekeepers from 16 different countries and gives a comprehensive and very readable account of recent research into beekeeping and its application to the breeding of bees for a sustainable future. The diversity of authors enhances the presentation of the story and their photographs and minibiographies, and the interviews with beekeepers and specialists involved in conservation work add an interesting human dimension.

Europe is a hotspot for genetic diversity in Apis mellifera mellifera with numerous locally adapted strains whose future is at risk from genetic intermixing and the spread of disease that accompanies the movement of bees between regions. Consequently, the first three chapters address the question: Why is sustainable bee breeding important? The first chapter gives a brief account of the origin and early evolution of insects up to the oldest known stingless bee (c. 96 – 74 million years BCE) and the earliest known fossilized honey bee (c. 45 million years BCE). There follows a summary of the debate about the origins of Apis mellifera (some 2 million years ago) and a description of the defining characteristics of its many subspecies. It is clear from this that bees have evolved to meet the challenges of varied environments, forage supply and parasites, and that movement of bees from region to region can be counterproductive.

The second chapter outlines the long relationship between bees and humans and charts the development of modern bee breeding techniques. So we learn about honey hunters, touch on the involuntary selection that was applied when skeps were selectively destroyed for honey harvest, and see how the ease of management that came with the moveable frame hive in the mid-nineteenth century led to modern approaches based on detailed testing and the application of our developing understanding of bee genetics.

Chapter 3 asks the question: Why does it make sense to use local bees? and provides evidence from large pan-European studies to demonstrate that the longevity, productivity and behavioural characteristics of local bees are superior to those of non-local stocks.

The remainder of the book outlines problems and solutions for the breeding of bees and promotes the approach of 'conservation by utilization'. It argues strongly that if we want to conserve locally adapted bees, we must use them exclusively and avoid the importation of new genetics from other regions. However, this does not stop us from using genetic selection to improve commercially important traits. So 'sustainable bee breeding' is defined as the integration of conservation and genetic improvement, and the second section of the book expands on these issues.

Chapter 5 outlines the structure of a breeding programme and introduces the importance of apiary management to enable fair comparisons among colonies and the quality of records required for the accurate selection of superior queens. These are important issues which are discussed in greater detail in a later chapter. Chapter 6 follows with a description of the commercial characteristics that might be measured, including colony growth, honey

yield, docility and swarming behaviours. More than half the chapter is devoted to the assessment of varroa resistance traits, including Varroa Sensitive Hygiene (VSH), recapping (REC) behaviour, and Suppressed Mite Reproduction (SMR). The measurement of these traits is described concisely and with great clarity and gives an interesting insight into the evidence-based views of scientists and beekeepers outside the UK. The authors promote the 'ecologically adapted' strategy of allowing colonies to develop under pressure from parasites, with treatments restricted to colonies that cross defined thresholds. Consequently, genetic improvement for resistance to parasites is viewed as the basis of sustainable beekeeping.

Domestication of livestock species is dependent on our ability to control the mating process, something which is not easy in bees. Some five chapters are devoted to descriptions of the reproductive biology of queens and drones and their application to the production of healthy, fertile breeding stock. This covers everything from the detailed practicalities of queen rearing to finding a drone congregation area, and from the siting and management of breeding stations to the use of artificial insemination.

The editors and authors have met their objectives in producing a book that is useful for beekeepers with an interest in how science can inform the practice of bee husbandry. It provides a comprehensive coverage of the issues with impressive detail and clarity of presentation, and it is beautifully illustrated throughout. Additional multimedia content can be accessed via a browser or the Springer Nature More Media app. This is both a book for reference and one to read for sheer interest; it provides essential information for those concerned with bee breeding and conservation and is a good read for anyone who marvels at the complexity of bees and has an appetite to learn more.

Basil Wolf

Sustainable Honey Bee Breeding: A Scientific Guide for Future Beekeeping
Cecilia Costa, Marina Meixner, Norman Carreck, Aleksandar Uzunov and Ralph Büchler – Editors
Springer Cham
ISBN 978-3-031-94203-7
Softback, 247 pages, 182 illustrations, £34.99

Quick Honey and Pork Chops

Ceri Joyner

Ingredients

- 2 tbsp honey
- 1 tbsp soy sauce
- 1 tsp rice vinegar
- 3 garlic cloves finely chopped then crushed
- 1 tbsp vegetable oil
- 1 tbsp unsalted butter melted
- 2 pork chops
- Small handful of fresh parsley to serve (optional)

Method

1. Combine the honey, soy, rice vinegar and garlic in a small bowl.
2. Mix the oil and butter in another bowl.
3. Heat a griddle pan over a high heat until searing hot.
4. Brush the pork chops all over with the oil and butter mixture, season, then cook for 4-6 mins, turning halfway, until cooked through.
5. Lift the pork out of the pan and onto a plate using tongs, then brush the honey mixture over both sides and return to the pan to cook for a further minute on each side.
6. Rest the chops for a couple of minutes, then drizzle over any juices from the pan to serve.
7. Sprinkle with the parsley to finish, if you like.

Pam cadw gwenyn

Nia Hamer

Rydw i wedi bod yn cadw gwenyn ers 4 mlynedd. O'r cychwyn cyntaf roeddwn yn hollol swynol. Treuliais oriau gyda'r cwch cyntaf hwnnw, yn eistedd allan o'r golwg ac yn eu gwylio'n mynd a dod. Yn gwrando arnyn nhw'n suoganu ac yn sylwi ar unrhyw newid yn eu cyflymder a'u sain. Doeddwn i ddim yn deall pryd hynny mor bwysig ydy'r arsylwi tawel hyn.

Roeddwn yn frwdfrydig iawn ond digwyddodd rhywbeth yn ystod y misoedd cyntaf gwnaeth bron atal fi cadw'r gwenyn: ces fy mhigo'n gas. Deg pigiad ar un achlysur ac wedyn unwaith eto. Yr ail dro ces adwaith gwael- crychguriadau'r galon a phwysedd gwaed uchel ac adwaith i'r croen oedd angen gwrthfeiotig i'w gwella. Roedd arnaf ofn ar ol hynny. Cymerodd sawl wythnos i mi magu hyder agor y cwch hyd yn oed, er bod y meddyg wedi rhoi tabledi gwrth histamine cryf i fi. Es at y cwch eto dim ond wrth wisgo siwt tri haenen.

Rydym yn dysgu o pob profiad ac rwy dal wedi fy hudo gyda'r gwenyn.

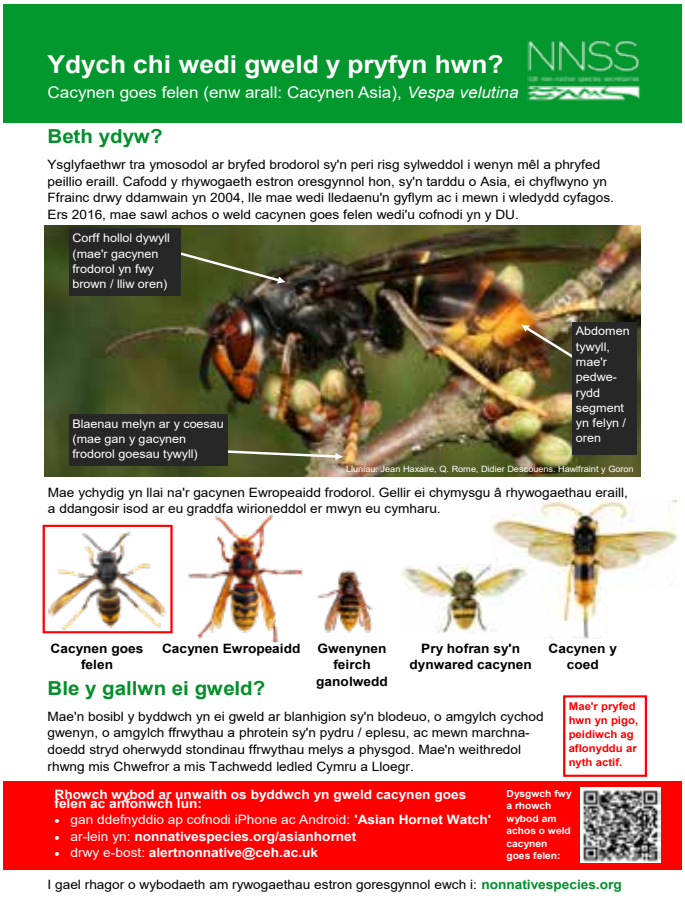
Mae mor diddorol eu cadw gan bod chi ddim yn gwybod beth bydd yn digwydd nesaf efo nhw, mae nhw yn gwneud beth sydd yn siwtio nhw ac mae angen i ni cyd weithio gyda nhw.

Pwy byddai ddim yn rhyfeddu ar sut mae y gwenyn yn siarad efo'i gilydd yn y ddawns siglo- "waggle dance" mae'r gwenyn yn defnyddio i dangos gweddill y cwch ble mae bwyd ar gael a'i pellter i ffwrdd? Symudiadau cymleth ar onglau sy'n dangos yn union lle mae'r haul- fel cwmpawd. Mae'r gwenyn yn dawnsio gan rhedeg mewn pattrwm ffigwr wyth gyda chanol llinell y siglen wedi'i ongli i gyfeiriad y ffynhonnell fwyd o'i gymharu a'r haul. Mae cyfriad a hyd nifer y figurau o wyth a gwblheir i gyd yn ymwneud â phellter y ffynhonnell fwyd, tra bod egni'r ddawns yn dynodi cyfoeth y ffynhonell fwyd.

Mae'r gwenyn yn sicrhau bod gan y cwch brenhines da ac mae gan bob gwenynen swydd i'w gwneud drwy gydol eu hoes gyda phob gwenynen benywaidd,ar wahan i'r brenhines, yn cymryd pob rôl yn ei tro.

Rwy'n gwybod fod gen i lawer i'w ddysgu am gwenyna ond hefyd bod gyda pawb ohonom mwy i ddysgu am y gwenyn.

Ar noson braf yn yr haf does dim byd gwell gen i na eistedd yn y gwenynfa a gwylio'r gwenyn yn mynd a dod o'r cwch. I mi, hobi yw cadw gwenyn, ni fyddaf byth yn gwneud arian ohono gan fy mod yn sicrhau bod gan y gwenyn ddigon o fwyd a byddaf ond yn cymeryd mêl sydd dros ben. Does dim blâs i'w cymharu a'r blas mêl cartref.



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2026 Convention

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PROGRAMME

9.45	Will Van Blyderveen,	Stingless bees in the Amazon.
10.15	Lynfa Davies,	Managing Colony Numbers. Sponsors: Conwy BKA and Schroders Greencoat
11.45	Prof Robert Pickard,	Atoms, Nutrition and Life NDB Sponsored lecture
13.30	Stephen Riley,	Varroa resistance. BDI sponsored lecture.
14.45	Richard Rickett,	Bees and Trees: An Ancient Partnership

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Managing comb in spring for healthy colonies

Lynfa Davies, Master Beekeeper, NDB

Replace old comb to reduce pest and pathogen loads in the hive.

As we move towards spring, we need to set ourselves up to be ready for the busy time in the apiary that always seems to catch us by surprise. We also need to set up the bees so they are ready to burst into action. But what does this mean? What needs to be ready and why does it make a difference?

Spring is a magical time of the year for the beekeeper. We see our bees go from a quiet, compact group to a busy tour de force in a matter of weeks. Before we know it, colonies are running out of space, swarms are everywhere and supers are filling. In what seems like the blink of an eye, winter is a distant memory, we can't remember what day of the week it is and every last piece of equipment from the bee shed has been commandeered. Welcome to the beekeeping season!

It is impossible to put a definitive timepoint on when spring arrives as our weather is so variable, but the bees will have begun their spring preparations weeks before we do. When the conditions allow, we will be keen to do our first spring inspection (refer to the Spring 2023 edition of the Welsh Beekeeper for a detailed article on this topic). This only needs to be a quick check for the following:

- Is the colony queenright?
- Do they have enough stores? Remember the weather can turn cold again and a promising early spring can soon turn into a false start.
- Is the colony healthy?
- Do they have sufficient space?

One way that we can support the health of our colonies as we move into the productive time of the year is to change them onto clean comb. It is good practice to change their comb every three years to reduce pest and pathogen loads within the hive as well as making your inspections far easier. In a wild situation, wax moths perform this task but in our managed colonies the task falls to us.

Spring provides us with an opportune time to undertake this task, but you need to keep your eye on the ball and ideally intervene before the bees have filled everything with brood or stores. This means you need to be ready and have prepared all the clean equipment and frames that are required. As the colony expands, they are pre-programmed to draw comb, and as long as they have space, feed and warmth they will readily do this, making this a perfect time to change some or all the comb in the brood box.

Photo: Rob Davies

Is the colony queenright?

There are three options for changing comb:

- A rolling replacement of 3-4 combs each year.
- The Bailey comb change.
- A shook swarm.

The rolling replacement involves removing 3-4 of the outer frames in the brood box before the bees have expanded enough to start using them. They may be damaged frames or old frames that you have gradually migrated to the edge of the box for removal. Exchange them for frames of foundation and as the colony expands they will bring them into service. If poor weather prevents inspections, it is not uncommon to find they have expanded onto the frames you were planning to remove so you do need to keep an eye on things.

The Bailey comb change

The Bailey comb change is a complete but gradual changeover of combs in the brood box. First, they are allowed to move up into a clean brood box with fresh foundation and once wax building has commenced the queen is held up in this box with strategic use of the queen excluder. The entrance is moved to reduce traffic over the old combs and once the brood in the old box has all emerged the old box can be removed, wax rendered and hardware cleaned ready for re-use. Watch out for a sudden nectar flow that may mean they fill the old comb with stores and if there is not sufficient nectar being brought into the hive, a feed will be required. The whole process takes 3-4 weeks but it is relatively stress free for the bees.

The shook swarm

The shook swarm is an extremely quick and effective method of comb change. It involves shaking all the bees from their dirty old comb into a clean box with frames of fresh foundation and a queen excluder placed underneath to prevent them absconding. The colony is fed to aid rapid drawing of the comb. All the brood and stores from the old box are rendered and cleaned for re-use. Any pathogens on the combs are removed instantly from the colony but most importantly, all the *Varroa* mites locked in the developing brood are also removed. The process can be followed up with a bait frame or a treatment of oxalic acid to remove any mites on the adult bees resulting in a thorough *Varroa* treatment early in the season.

There are potential pitfalls to this method and caution should be exercised.

- Only perform this on strong colonies (covering at least 8 brood frames).
- Avoid doing this too early in the season and watch the long-range forecast. Ideally you want pleasant, warm conditions that support the bees with their foraging and comb building.
- Feed them irrespective of whether there is a nectar flow. They need significant resources to build comb.
- This process is easier to do before supers have been added to the colony, making it a judgement call on when to do it without delaying when the colony gets extra space.

Photo: Rob Davies

Left: Shake the bees into a clean box with fresh foundation
Right: Always feed the colony to help them build comb.

It takes a little experience to be able to read which method will suit your colonies, but with care and attention your colonies will respond with increased vigour and hopefully reward you with plenty of honey.

This article accompanies a webinar delivered and recorded in February 2026 that includes a more detailed account of the methods described in this article. The webinar is available to view on the WBKA website (https://wbka.com). The article and webinar are part of a series aimed at intermediate beekeepers to support those who are looking to expand their skills and focus on keeping healthy colonies.

Photo: Rob Davies

Spring is a magical time of the year.

YELLOW LEGGED HORNETS ARE HERE

What do we know?

Paul Pearce

Prepare to detect the YLH and protect your bees.

This article is written with the report of the yellow legged hornet (YLH) nest in Wrexham fresh in my mind. So, by the time this goes to print more is likely to be known about that unwanted and unexpected news; however, time waits for noone, so here is what we currently know about YLH. Details of the history and background to the YLH invasion of Europe and now Wales are omitted for brevity. The key points are offered to allow a quick read with more detail in the following narrative and images.

Key Points

- Not just a beekeeping issue. YLH will impact the whole environment.
- A single YLH is generally not aggressive - not unlike a wasp.
- Disturbing a nest often leads to an all-out attack.
- The nest does not need to be physically attacked. YLH can sense CO_2.
- For safety, stay five metres from a nest. A bee suit will not protect you.
- YLH can sting repeatedly and their sting is ⅓ longer than that of a honey bee.
- Prolific reproduction; each nest can lead to 15+ nests in the following year.
- Queens hibernate after mating and emerge when the temperature is around 13°C.
- An apex predator in the UK - nothing predates it.
- A full-size nest may consume 11 kg of invertebrates per year.
- Can move over considerable distances by inadvertent hitch-hiking.
- Can move up to 50 miles per year by natural migration.
- Once established, it will be nearly impossible to eradicate.
- If in doubt, report it - better to misidentify than not report.
- Monitoring and trapping can be emotive.
- You can defend a hive but not the environment.
- Uninformed members of the public are likely at greater risk than beekeepers.

Safety

YLH can sting repeatedly and their sting is 33% longer than a honey bee's (4.5 mm/6 mm). Our normal beesuits will offer only limited protection or none. It is therefore essential that beekeepers understand that, whilst a single YLH may not present a risk, approaching a YLH nest can be extremely hazardous unless you are wearing YLH proof protection. Binoculars to observe suspect nests from a distance and a clear escape route should be top of your thoughts. Equally, if a hive is suffering from a YLH attack, proceed with caution. Without adequate personal protection, a hive under attack may be a lost cause. A tough call for most beekeepers.

Much is publicised about YLH nests being high in trees, but this is not always the case. Like honeybees, YLH will always seek a suitable site and often, where no tall trees are present, these are at lower levels where inadvertent human contact is possible. Sadly, in Europe people have died as a result of multiple YLH stings. Some have had underlying health issues that contributed but others have been people going about their normal business. Anyone enjoying the outdoors can be at risk, but people working in agriculture and horticulture appear to be at higher risk of inadvertently disturbing YLH nests. We now need to spread the message about the risk; everyone must start to look very closely at what they are doing in case a nest has been built within 5 m of their activity.

The Yellow Legged Hornet

The YLH is a vespoid and has many of the traits of indigenous wasps and hornet. They are omnivorous and territorial, and the newly mated queens hibernate leaving the rest of the nest to die as winter approaches. Evidence suggests they are territorial for nesting, with 50 m being their preferred minimum separation, but for foraging they will hunt within 5 m of another nest. YLH produce two nests; in the spring the newly emerged queen will make a small primary nest. As she produces her workers, the nest becomes too small and the whole colony will make and move to a much bigger secondary nest. A single nest can produce over 300 new queens each year, which will all go into hibernation. Fortunately, survival rates are low, but each nest can still produce 15-20 nests the following year. YLH can expand in the countryside by as much as 50 miles per year, generally in the spring. They are also known to inadvertently hitchhike; usually the queen's chosen hibernation spot being moved over many miles to a new location (in freight, under motorhomes/caravan, etc.) so be prepared for more unexpected arrivals.

Early season trapping of queens has the greatest impact on nest establishment. Apiaries are most at risk from mid-year onwards as YLH seek protein and carbohydrates. It is estimated that each nest can consume 11 kg of invertebrates per year (about 2 good size bee colonies).

The YLH has no natural predator in the UK.

Recognition & Reporting

Most of the public cannot recognise the difference between a honey bee and a wasp, so expecting them to recognise the difference between a YLH and a European hornet, a wasp or honey bee is a real challenge. Beekeepers are, on the whole, better able to differentiate the YLH. The Non-Native Species Secretariat has produced a series of recognition guides including images of nests, which can be ordered or downloaded from their website. An example is shown in Figure 1. In addition, the Government has produced a YLH App called Asian Hornet Watch (IOS and Android - free in the appropriate app store) that will help you identify and report a YLH.

It is always better to report something you are not sure of than ignore it. All reporting requires an insect (preferably alive), a picture or a video to give the report credibility. This is not the government being awkward. It allows the triage of many reports received daily into verified incidents. Many associations are building monitoring and verification groups which can assist locally. If you can help, please volunteer. Speak to your association's YLH coordinator.

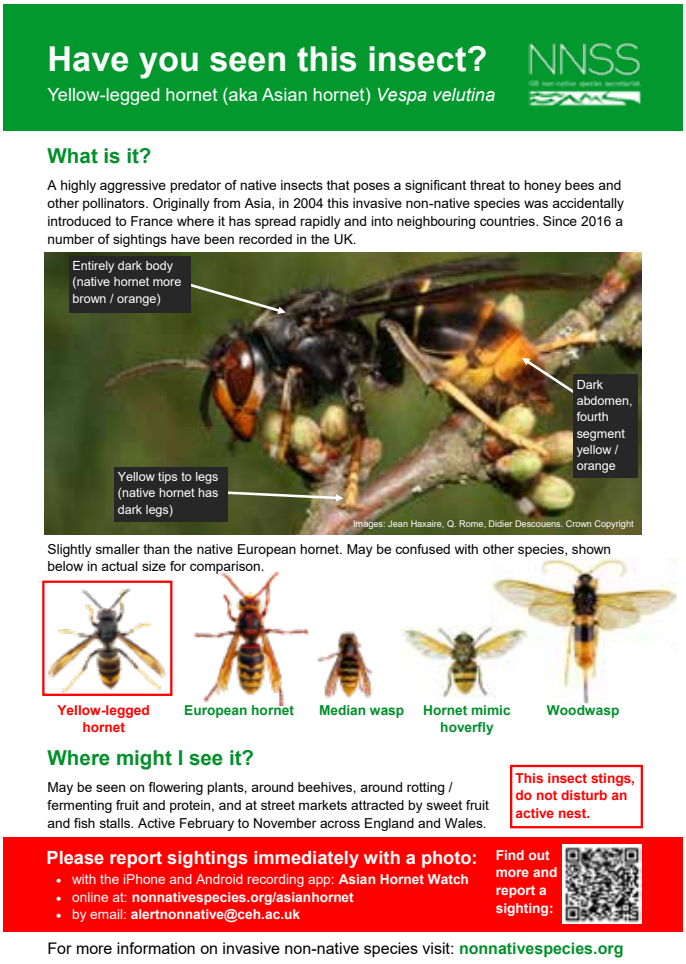

Figure 1 The GB Non-Native Species Secretariat (NNSS) https://www.nonnativespecies.org/ provides a wealth of information about all aspects of the YLH, including identification and alert posters in both English and Welsh.

Follow the Government Plan

The Welsh Government plan for YLH, produced in conjunction with England, is available on Bee Base and other internet sites. It is called the England & Wales Contingency Plan – Pest Specific Contingency Plan Yellow Legged Asian Hornet. The plan, as in most of Europe, is for Government agencies to lead on the

eradication of the YLH by finding and destroying nests. There is an option in the current plan to switch to a (currently undefined) containment plan where the emphasis of Government agencies will switch to training others to manage the risk. This is likely to make others responsible for the containment work and its funding. Local councils especially should be aware of this.

Trapping/Monitoring

There is currently no national surveillance plan covering the whole of Wales. Some sentinel trapping activity is underway, and some beekeeping associations have voluntarily set-up YLH monitoring and verification groups, but net, overall, there is no nationwide Government coordinated monitoring programme, or any indication of one being established.

Whether to monitor or trap stirs different passions in beekeepers and environmentalists and there is much debate about efficacy if YLH are not known to be present. However, if you are in a YLH migration zone (within 50 miles of a nest) you will want to know if YLH are present, leaving you a choice between monitoring and trapping. The following presents the mechanisms; I leave it to the reader to determine their chosen path. The reader should also consider what practice a monitoring group may need to take to prepare for YLH arrival. Tomorrow's trap managers and verifiers need training and practice today.

Readers can easily monitor for YLH using a simple homemade bait station (Figure 2;) many are commercially available too. The biggest drawback from purely monitoring is that you have to continually monitor the device and take action to capture evidence that you have a YLH so you can report it. The alternative is to use a selective trap that will automatically capture evidence and does not need continuous monitoring. The selective trap shown in Figure 3 is a home-modified commercial trap.

The unintentional capture of non-target species using traps is an emotive subject in many areas, not just YLH. Fortunately, in the UK insect sizes give us a helping hand. Very simply, any insect that can pass through an 8 mm hole can also pass through a 6 mm hole. All that is, except YLH that can enter a 8 mm hole but cannot pass through a 6 mm hole. We can use the YLH size to effectively selectively trap them. Death of any insect, no matter the size, by inadvertent drowning is also an issue but can be overcome by using the monitoring station concept within a selective trap.

Figure 2. A bait station can be made using a honey jar, cloth wick and sugary liquid bait. They need to be monitored frequently.

Figure 3. A selective trap will allow small insects to escape whilst holding the YLH. It does not need continuous monitoring.

By adding 6 mm escape holes, 8 mm entrance restrictors and an internal monitoring station, the selective trap allows all indigenous insects that can enter to escape. but it captures YLH. Commercial versions are available too; all of which minimise the unintentional capture of non-target insects. Twenty-eight selective traps were deployed in Meirionnydd in 2025 and whilst there were no YLH detected, non-target insect capture was confined to half a dozen insects in one particular trap (all released unharmed).

Please note that YLH is an Invasive Species. If you capture one, you cannot release it unless directed by a government agency to do so. See the Wildlife and Countryside Act 1981 for more information.

Apiary Protection

None of the following apiary defences have been tested in Wales; all are offered thanks to the good work of Andrew Durham and Dr Sarah Bunker, both of whom have researched and written comprehensive books on YLH (details below).

We know from selective trapping work that YLH cannot get through a 6 mm hole. Honey bees, including drones and the queen, can. We also know that neither a honey bee nor a YLH can fly with their wings partially folded. A honey bee wingspan is 11 mm and YLH 25 mm.

We can use these physical dimensions to mount our first line of defences against the YLH. Firstly, reduce the entrances to 6 mm. This prevents YLH access and gives the honey bees a defendable aperture without restricting normal hive activity. A series of 6 mm holes is recommended to prevent congestion, and you may need to consider adding insect proof ventilation. Of note, a typical mouse guard is about 6.7mm so a little too big. The next line of defence and arguably easier to do first whilst the hives are quiet, is to move all the hives together with the aim to reduce all gaps between hives to less than the wingspan of a YLH (25 mm). This is not without its problems. Closer hives support drifting which can impact disease spread. You should consider adopting anti-drifting measures (e.g., painting the hives in different colours) at the same time and be more vigilant for disease spread. For those with hives on stands, we recommend adding a simple barrier to stop YLH operating under the

Figure 4. A traditional apiary layout (top) allows YLH to hawk around the hives. Placing the hives very close together (bottom) removes hiding places for the YLH but may make work routines more difficult.

Figure 5. A hive stand barrier stops YLH from lurking beneath the hive as they hunt for bees.

Figure 6. The Muzzle is a wire cage that fits over the entrance and inhibits YLH hunting behaviour.

Figure 7. Solar powered electric harps protect these hives by electrocuting hawking YLH.

hives. Closing hives together will impact your hive work especially if you operate cold-way or have roofs wider than the hive body. It has to be carefully thought through but the key is to remove any gaps where YLH can lurk to hunt. Figure 4 shows a traditional apiary layout (upper) and a more YLH proof style (lower). Figure 5 shows a typical hive stand barrier.

Publicity and training are key activities.

The next line of defence is a muzzle, as shown in Figure 6. This cage fits over the entrance of the hive and physically inhibits the usual YLH hunting around the hive entrance. They can be homemade or purchased. Net size is believed to be key but there is much variety in sizes from as small as 8 mm in Spain to 25 mm in France. The example pictured is 13 mm. I believe size is driven as much by material availability as science, although we know the wingspan of a bee is 11 mm & YLH is 25 mm.

The final line of defence is the electric harp (Figure 7), this is an electric fence type device that electrocutes YLH hawking across the front of the hives. Two versions are in-use. One is called dry and the other wet. As their names imply, the dry one is like the one pictured with nothing under the device. The wet one has a liquid filled trough under the device in which the YLH drowns, thus preventing a stunned YLH from recovering. Reports on use are mixed, with some French beekeepers using them and some using only muzzles and entrance restrictors. Equally, reports on muzzles are mixed too. All harps require a power supply (mains, solar or battery) and a pair are required to protect an area of about 5 m. Above 5 m more are required. Cost may be driving whether they are adopted or not in Europe.

Publicity

We don't want to be accused of scaremongering but please take any opportunity to educate the public. We are now on the cusp of people having to look carefully at everything in the outdoor environment and be aware when there is a YLH nest close. From berry foragers to dog walkers; groundsmen to railway workers; and naturalists to outdoor adventurers; all are at risk. Please spread the word.

Training

Training has started. Last year the WBKA continued YLH education to association coordinators under the Invasive Species Chair. Already this year Montgomery, Aberystwyth and Brecon associations have held a combined dedicated YLH workshop. Other associations have or are about to hold YLH talks. The WBKA Spring convention will have a rolling YLH presentation/ workshop. There is a growing number of people who can help everyone understand and prepare. Don't be afraid to ask.

Documents, Books and Links

England & Wales Contingency Plan – Pest Specific Contingency Plan Yellow Legged Asian Hornet - download from Beebase. It lays out who is doing what and how.
The WBKA YLH Strategy. Should be with your association secretary but can be requested from the WBKA.
Asian Hornet. The Beekeeper's Guide to Defences against the Yellow-legged Hornet *Vespa velutina* by Andrew Durham. A good book worth reading.
The Yellow Legged Hornet - A Handbook by Dr Sarah Bunker. A good book worth reading.
Tywyn Town Council Contingency Plan. Offered as a starting point to help any council produce a plan. Should be with your association secretary but can be requested from the WBKA.
Single page documents AHATs might like: Safety Brief, Trap Manager Brief, Verifier Brief and a One Page Simple Brief (with update). All offered to help associations.
Non-Native Species Secretariat website. Great source of posters and identification aids: https://nonnativespecies.org.

Bee Base. A good source of YLH information and trapping information.

I am indebted to everyone who has contributed to this article; fellow Trustees, association YLH coordinators, various authors and my local council. Thank you all.

Flint and District BKA

Flint & District BKA invite you to their monthly meetings, please see website for directions www.flintbeekeepers.co.uk or contact the secretary at secretary.fdbka@gmail.com for more details.

21st March: Lynfa Davies, 'Beekeeping when the weather doesn't play ball'

18th April: Beekeepers Q & A with a disease quiz

Doors open at 1.30 p. m. at the Edith Banks Memorial Hall, Northop

Our bees form a winter cluster naturally

Clive & Shân Hudson, Llŷn & Eifionydd BKA

Introduction

Beekeepers have long understood that honey bees cluster naturally to insulate and maintain sufficient heat to see them safely through the winter. Indeed, Beowulf Cooper, a professional entomologist who devoted much time to the study of honey bees, states, "Native bees tend to cluster up for winter early. The clusters are exceptionally tight and quiet and tend to break up late." A few lines later he states, "Most native strains in the autumn go into winter cluster at the front of the hive" (Cooper 1986, 25). This is the pattern and position of the winter cluster that we observe in our *Varroa* resistant, near-native dark Welsh bees. So, we were intrigued to read a research paper titled, 'Honeybee cluster—not insulation but stressful heat sink' (Mitchell 2023), which uses a theoretical mathematical model to show that the outer layer of a wintering honey bee colony, the mantle, does not act as an insulating layer but as a heat sink that enables heat to escape. Mitchell suggests that clustering 'is an evolutionary behavioral reaction to an existential threat that results in increased cold and exertion stress'. If this is the case, it suggests that keeping bees in wooden hives may be cruel, an issue that was discussed by David Wilkinson in the autumn 2025 edition of the Welsh Beekeeper. It also leads us to ask: 'Do our bees cluster naturally if they are kept in a well-insulated hive?'

The design of our temperature monitored hive

We have monitored the temperature of bees in a wooden National hive for the past 15 years and decided to add substantial insulation to this hive and then monitor the colony for temperature and by visual observation over a winter. The insulation was applied to the hive on 1st November 2024 and removed from the hive on 2nd April 2025. The hive was opened for a visual inspection of the colony on 9th January 2025 and at the end of the trial.

Our temperature monitored hive has four temperature sensors (that post data wirelessly at approximately one-minute intervals) and are labelled, 'Below Crown', 'Ambient', 'Cluster 2', and 'Cluster 1' (see Figure 1). The two centrally positioned 'Cluster' sensors will usually be within the nest unless the nest is very small and positioned asymmetrically. The 'Below Crown' sensor protrudes by 5 mm through the centre of the crown board and therefore records the temperature at the top of the brood box. 'Ambient' temperature is recorded by a sensor hanging outside and just below the lower back edge of the hive roof. This sensor is in shade most of the day apart from sunrise when, on a sunny day, it records an anomalous 'blip' of radiant heat that shows as a brief spike on the graph. 'Cluster 1' is located on the east side of the central brood frame (of 11 frames); 'Cluster 2' is located on the east side of the adjacent frame to the west.

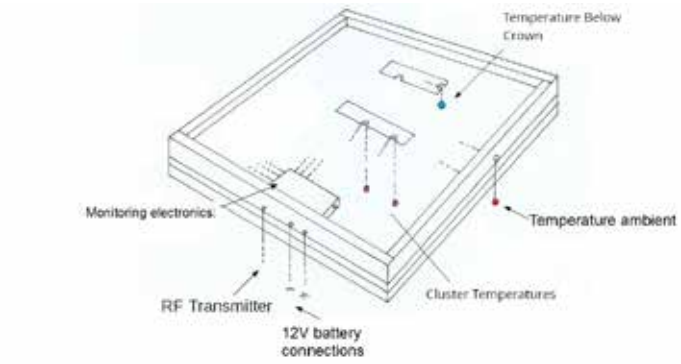

Figure 1: Schematic diagram of the monitoring setup, electronic components and crown board. Technical details can be viewed here: https://beemonitor.org/setup/

The specification of the insulated hive

The insulation to cover the temperature monitored hive was made from 35 mm PIR (polyisocyanurate) and 50 mm EPS (expanded polystyrene) board, together with 5 mm thick corrugated cardboard to give strength to the outer cover of EPS. A closed air gap of 25 mm is incorporated between the surfaces of the two boards.

The components of the insulated hive are shown in Figure 2. In summary, two sides of the hive have 145 mm (5.8 inches) of insulation. The other two sides have the

Figure 2: The components of the insulated hive (crown board is representative).

addition of 25 mm of EPS in the indents of the National hive, giving 190 mm (7.5 inches) of insulation. The roof has 195 mm (7.7 inches) of insulation, which includes a 40 mm enclosed space in the crown board to house the electronics. The hive floor is solid 25 mm wood. The hive entrance is the only opening into the hive and is a slot of 95 mm x 8 mm. The insulation is protected with a cover of black painted aluminium.

The evidence for clustering

The insulated hive was undisturbed until it was opened at 11.05 a.m. on 9th January 2025. The bees were clustered in a roughly ovoid shape and with a bias towards the front of the hive (Figure 3) in a similar pattern to bees in an uninsulated hive which we had opened 15 minutes earlier (Figure 4).

On the 2nd April 2025 we found that the bees displayed a roughly circular pattern with a bias towards the front of the brood box (Figure 5). The pattern was very similar to that observed on 9th January, although now larger with new bees and sealed brood. Examination of the hive floor confirmed that the bees had been in a cluster for the whole winter (Figure 6). The shape of the floor debris displayed an ovoid shape that indicated the position of the clustered bees during the winter with its bias to the front and east side of the brood box.

The recorded temperature evidence for clustering

The internal temperatures were higher in the insulated hive, however, both hives had a significant difference between the Below Crown and Cluster temperatures (Table 1). We interpret this difference as evidence that the bees had a higher temperature within their own mass, i.e. they were clustering, even in this super insulated hive. The weight change of the insulated hive was -2.38 kg, which compared to an average of -3.21 kg for seven uninsulated hives in the apiary.

Figure 3: The insulated hive opened at 11.05 a.m. on 9th January showing the colony in a cluster.

Figure 4: National hive with no additional insulation opened at 10.54 a.m. on 9th January 2025 showing the colony in a cluster.

Season	Temperature (°C)			
	Below Crown	Cluster 1	Cluster 2	Ambient
2023 - 24	9.3	13.9	12.2	7.3
2024 - 25	15.0	21.7	19.8	7.3

Table 1: Average mean temperatures for the two winters 2023-2024 (no additional insulation) and 2024-2025 (with additional insulation).

Figure 5: The insulated hive opened at 10.55 a.m. on 2nd April 2025; the sensor is in the brood area. The frame in the photograph shows the location of the colony towards the front of the frame with an area of sealed honey at the back of the frame.

Figure 6: 2nd April 2025 examination of the floor of the insulated hive with the ovoid shape of the debris indicating the position of the bee cluster during the winter months (entrance at the top of photo). Notwithstanding the slugs in the photograph, the interior of the insulated hive - including the floor - was dry.

Discussion

It is our observations of honey bee colonies that has led to some reservations about the theory that keeping our bees in wooden hives over the winter was deliberately provoking stress and forcing the bees to cluster. During our 40 years of beekeeping, we have observed bee colonies living directly under slate roofs and even in the open, which suggests that bees can maintain their required temperature within their own comb and cluster in a wide variety of circumstances.

Over the years we have observed winter temperatures in low single digits, and on a few occasions below 0°C. The most extreme example was on the night of 14th - 15th December 2022 when the ambient temperature fell to -6.8°C, and 'Cluster 1' sensor recorded a temperature of -1.9°C. This observation shines at least some doubt on the often quoted statement that an outer cluster temperature of 10°C or less will lead to bees dying. The 10°C outer cluster contour quoted in the article by Mitchell, is used in his calculations, and in his categoric statement, "Honeybees that stay outside this contour will die" (Mitchell 2023, 11). The queen in our colony not only survived that cold night, but she also lived into the next three seasons and was the queen of the colony inside the insulated hive.

Figure 7: An example of a bee colony in a roof beneath thin stone slates.

All three examples demonstrate, we suggest, that these bees were keeping whatever heat they required inside their own comb and cluster. And what exactly is that heat requirement, particularly while wintering? Winter bees are physiologically different from summer bees and maintain significantly different colony temperatures. Metamorphosing brood require an ideal temperature of 34°C to 35°C; but what is the ideal temperature requirement for a wintering colony without brood? It will be a lower temperature but a precise answer to that question is less easy to give. We have no problem believing that bees are 'happy' in a thick-walled tree cavity. On the evidence, however, who is going to say that

bees may not be equally 'happy' in their long-established and large nests below slate roofs? Let us not over anthropomorphize; let's look at the evidence and gain our knowledge from what we observe.

Figure 8: An example of a colony building comb in the open air. This colony was recorded in 2012 and built comb in the open for the following eight seasons.

We also question the use of plastic based insulation materials used for hives and insulation because of the microplastic pollution that can be produced as they degrade. We have seen evidence for this with very fine plastic 'frass' on the varroa tray beneath plastic hives and are concerned about its potential to pollute the bees, their honey and the environment.

Conclusion

We do not have definitive answers to many questions regarding the winter clustering of honey bees, their optimum temperature for overwintering and their required insulation. Regarding the theory proposed by Mitchell, until we see more evidence from overwintering honey bee colonies we are content to agree with Tom Seeley, 'This subject requires much more investigation…', (Seeley 2019, 229). The conclusion from our observations and evidence is that our bees form a winter cluster naturally in our wooden National hives, whether the hive is highly insulated or not.

Acknowledgements

Thanks to Glyn Hudson for the design, building and maintenance of the bee monitor electronics.Thanks to Cerys Hudson for invaluable help with the layout of the article.

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An extended version of this article is available at: https://beemonitor.org/

William Justine (1800 - 1874), Public Domain via Wikimedia Commons

François Huber: a pioneer scientist of bee biology.

Wally Shaw

Most beekeeping books will tell you that the American, the Rev. Lorenzo Langstroth was the father of modern beekeeping. That he was the first to understood bee-space (the spacing that bee naturally built their combs) and how to make the bees build combs in movable wooden frames. In 1851 he invented and patented the Langstroth hive which is the most widely used hive throughout the world. It was difficult to make the patent tight enough and he never made any money from it.

Looking back, it was about 60 years earlier that someone understood and exploited bee-space. Langstroth was pre-empted by a Swiss naturalist/entomologist by the name of François Huber. He was born in Geneva in 1750 and committed his whole life to the study of honey bees. What is remarkable about him is that he was blind. He started to lose his sight when he was a teenager but as an adult, he was totally blind. One eye was blind due to a cataract, and it was it was about another two centuries before there was an operation to remedy that. He could, however, distinguish light from dark with that eye. The other eye was blind due to a failure of the blood supply to the retina and nothing could be done to cure that. Apparently, he could usually hold a conversation with people without them realising his disability. Fortunately, Huber was born into quite a wealthy family who supported him financially, so he was able to live quite comfortably without earning an income. He was even sufficiently affluent to hire a manservant by the name of François Burnens who took on the role of Huber's eyes. Burnens came from farming stock, with little formal education but was obviously highly intelligent and pertinacious – a remarkable man in his own right. When later in life he returned to his home village he was appointed as a judge.

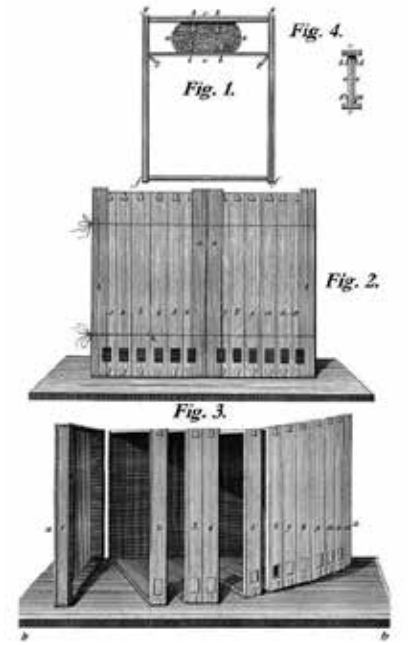
Despite his affliction Huber sought to marry his childhood sweetheart Marie Lullin but her family refused permission (what future was there in her marrying a blind man?). Unfortunately, she could not overrule this until she was 25 under Swiss law. They remained resolute and were married a few weeks after her 25th birthday. They subsequently had three children, including a son who followed in his father's footsteps and went on to study ants. His wife also played an important part in his life, acting as his secretary. She would read to him and wrote letters that he dictated to her, and this was the means by which his findings were communicated.

He started out observing bees in glass hives into which a swarm was introduced. The bees soon built several combs attached to the roof, but Huber was frustrated by not being able to observe the activity on all but the outside combs. To overcome this problem, he invented the Leaf Hive which could be opened like the pages of a book (see Figure 1). At one time Newquay Honey Farm had a replica that visitors could open and close with a switch.

Apparently, once they got used to it, the bees tolerated the intrusion of being opened up (much as they do in amoveable frame hive if is done gently). The activity of the colony on each of the frames could thus be observed.

The first subject under investigation was queen mating, or as he rather quaintly called it 'fecundation of the queen'. The puzzle was that, although the queen was in the company of numerous drones in the hive, mating never occurred. It was found that the queen had to be allowed to leave the hive in order to mate. They were able to observe that the first time she was released she did not venture far and could be kept in sight flying round her home, presumably memorising its location. When she left the hive for a second time she was quickly lost to sight and did not return for some thirty minutes or more. When she did return it was noted that she had part of a drone (the pseudo-phallus) stuck in her rear end. When it

was removed by the bees anxiously waiting for her return, her fallopian tube could be seen to be filled with a milky substance that was correctly identified as semen. The final evidence that she was 'fecund' was that in a few days she would start to lay eggs. They also found that if the queen was not allowed to leave the hive in the first 3 weeks of her life, she seemed to be unable to mate and become 'fecunded'.



François & Pierre Huber, Public Domain via Wikimedia Commons

Figure 1: François Huber's Folio Hive

The next question that puzzled them was how a queen could apparently switch at will from laying eggs in the smaller cells to produce workers to laying in larger cells to produce drones? It was assumed that there were two types of egg, male and female, so how could the queen ensure that they came out in the right order? They never did solve this one. You must remember that virtually nothing was known about genetics at this time and it was many years before chromosomes were identified and still later the role of DNA. It was left to another beekeeper a few years later (Johann Dzierzon, a Polish beekeeper) to work out that drones were the result of parthenogenesis (without fertilisation). The way he did it was by careful reasoning. He knew that a few workers in a colony could lay eggs and these always resulted in drones (albeit miniature drones). As workers could not and did not mate, he deduced that drones came from unfertilised eggs. There was no way at that time that he could understand the significance of haploid and diploid.

Huber went on to undertake a range of other investigations. All these were reported in a series of letters to other people who were researching honey bees at the time, and with whom he mostly seemed to disagree. All this was done in his native language which was French. A translation of these letters can be downloaded from the web (for free!) under the title of 'New observations on the natural history of honey bee by François Huber' I must admit they are not easy reading. They contain some rather unusual words, and I could not decide whether something had been gained (or lost) in translation.

Amongst the other things he investigated was swarming, both prime swarms and cast swarms and the way the workers controlled the emergence of queens to avoid conflict. He noted queen piping and quacking, although he could not work out how these sounds were produced. He understood the different behaviour of the colony that was undergoing emergency re-queening.

Of course, he easily worked out the development timing (from egg to adult) for the three casts (queen, worker and drone). By transferring larvae (which he always referred to as 'worms') into a cell of the correct size made out of glass, he was able to study the spinning of the cocoon in which metamorphosis to the adult bee takes place. He observed the massacre of drones when the swarming season was over, sometime in July. He also noted that if a colony was queenless the drones escaped this fate and were retained.

If I were to describe all his findings, it would occupy a whole issue of Welsh Beekeeper, so I will stop there. I hope you will agree that he was a truly remarkable man. He lived to be 81 and was cared for by one of his daughters in his declining years.

Addendum

Huber's leaf hive was a means of studying the activity of the bees and not for harvesting any significant amount of honey. However, Johann Dzierzon (who we have already mentioned above) invented a hive with movable frames that could be expanded by adding additional boxes. At about the same time a Ukrainian beekeeper by the name of Petro Prokopovych invented a similar movable frame hive and also a queen excluder that enabled brood and honey to be kept separate. He taught beekeeping and also wrote for several journals. He probably qualifies as the world's first bee farmer and allegedly kept 12,000 hives. He must have needed quite a bit of help to do that!

Why Do Bees Like "Dirty" Water? A Salty Little Mystery

Victoria Davies

How do bees choose a source of water?

My elderly (and gloriously dozy) spaniel Bramble has a talent that borders on obsession: give her a bowl of pristine Welsh tap water and she'll politely ignore it… then toddle outside and choose the murkiest puddle she can find, preferably one with a few leaves, a suspicious film, and the faintest whiff of "something that used to be alive". It's consistent enough that I've stopped calling it a bad habit and started calling it her preferred tipple. This got me wondering… do honey bees also prefer "dirty" water? And if they do, what are they getting from it?

I'm not a scientist (a social scientist, yes — but I don't admit to such things in polite company), and I'm not claiming this is the explanation. But I have fallen down the rabbit hole, and I'd love to hear from anyone in WBKA who can explain the physiology properly (or tell me I've inevitably got the wrong end of the stick).

The puzzling truth: bees often avoid our "best" water

I know many of us provide a lovely water station: a clean container, fresh refill, maybe a cork float or stones for landing. I'm lucky enough to have a pond with a natural spring next to my hives with lily pads and far too much pond weed. And yet, the bees still choose a muddy track puddle, a dripping compost bin, the gutter, or swimming pool water.

If you live near the sea, you may even notice bees flying in the direction of the shore on warm days. I thought it seemed odd until I remembered: bees aren't just drinking water for "thirst". Water is the working fluid in the colony.

What do bees use water for?

Water foragers collect water for several jobs, including cooling the hive (evaporative cooling and fanning on hot days); diluting crystallised stores and manipulating honey and nectar; mixing brood food (larval diet and general food preparation); and maintaining humidity for brood rearing.

So, I can get my head around water not simply being a beverage; it's more like a multipurpose ingredient and air-conditioning supply.

So… do they "like" salt water?

It's not quite that bees "like salt water" in the way we might treat ourselves to a salty snack. It's more accurate to say: Bees sometimes seek water with dissolved minerals—especially sodium. So, no hard and fast rule – how odd for beekeeping!

A lot of the "dirty water" bees choose is mineralised: traces of salts and nutrients from soil, stone, plant material, lichens, livestock areas, sea spray, or even old concrete. And sodium, in particular, seems to be something bees may actively top up when it's scarce.

Why is sodium important?

Sodium is essential for nerve and muscle function in animals generally (including insects), but plant-based diets can be relatively low in sodium compared with other minerals. Nectar and pollen vary enormously, but in some conditions the colony may be more "sodium-hungry" than others.

That could explain why bees are drawn to mud and puddles (soil minerals); damp compost and rotting wood (mineral-rich seepage); animal watering areas (salts and nutrients); coastal edges (sea spray, brackish seepage).

It also explains why they don't necessarily go for the

saltiest option. Too much salt is a problem for any living thing. The interesting bit is that bees seem capable of choosing a useful level, not just "more".

The key idea: bees might be balancing a diet

This is the part I find oddly comforting: the bees appear to know what they're doing.

Bees are not randomly being disgusting (which I'm pretty sure my dog is); they may be responding to what the colony needs and what the landscape offers. Their preference can change with seasons (brood rearing ramps up), weather (cooling demand rises); forage (different pollen/nectar mineral profiles), and colony condition (strength, brood volume).

So, one year your water station is bee-central; the next year, they ignore it and head for a boggy corner you didn't even know existed. I wish I had the sense to cut down on my sodium intake the moment I'd had enough. Bees, at least, appear to have a more functional relationship with salt than most of us do.

Why the seaside matters (and why it doesn't automatically mean "seawater")

Living on the coast adds extra variables:

- Sea spray can mineralise puddles and surfaces.
- Brackish water forms where streams meet the shore.
- Rock pools vary wildly in salinity depending on rain and tide.
- Wind direction can deposit minerals inland.

A bee flying "towards the sea" doesn't necessarily mean she's drinking straight seawater. She might be visiting a seep, a damp patch on rocks, or a brackish trickle that's just salty enough to be useful.

What the studies suggest (a short science detour)

Research backs up the idea that honey bees aren't simply being contrary when they ignore our "best" dŵr. A classic UK study from the Journal of Experimental Biology (Butler, 1940) found bees didn't strongly distinguish very dilute salt solutions from distilled water, and suggested that part of the attraction to "dirty" sources (gutters with decaying organic matter, sewage effluent, etc.) may be smell cues—volatile compounds that help bees "find" and stick with a water source. Later UK work by J.B. Free (Rothamsted) showed that after repeated water trips, many bees expose their Nasonov gland at the water source—essentially scent-marking it so other foragers can locate it. More recent experiments (using a simple "taste" test where bees extend their tongue in response to a solution) suggest bees can show a clear response peak at intermediate mineral levels, especially for sodium (and sometimes magnesium), rather than preferring "the saltiest" water available. Put together, the picture is: "dirty" water may be attractive because it's easier to find (odour), socially signposted (scenting), and sometimes nutritionally useful (minerals like sodium)—with preferences that can shift by season and colony needs.

Photo: Gail Hampshire Creative Commons Attribution 2.0

Bees exploit a water source.

A request to the real experts

As I said before, I'm no expert, and in the world of beekeeping I consider myself a newbie. I'd love someone with deeper knowledge to explain:

- How do bees detect and "decide" on mineral levels?
- Is sodium the most important mineral, or are other minerals equally important?
- Does pollen availability shift mineral cravings?
- What do we know about brackish/coastal water use specifically?

If you're reading this and thinking, "Oh, that's easy—here's what's going on," please consider writing in. I suspect a lot of us have watched bees ignore the "best" water we provide and wondered if we're missing something obvious.

Puddle Soup and respect!

My spaniel will probably never be convinced that Welsh tap water is superior to puddle soup. But with bees, I'm less inclined to call it poor judgement. Their choices might look odd to us, but a hive is an engine of tiny decisions—most of them purposeful.

If they are balancing their minerals with the precision I wish I applied to my own salt habits… well, it's yet another reason to respect the bees.

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