



LUNE VALLEY COMMUNITY BEEKEEPERS NEWSLETTER OCTOBER 2019

New members

We welcome new members Karen Chaplin, Simon Lock and Sarah Miller.

September activities

Cumbria Beekeepers Association, Cockermouth Branch Autumn Conference

This conference took place on 7th September and was attended by over 50 delegates. I was invited to give two presentations, *Beekeeping and the Law* and *An Alternative Approach to Beekeeping*. The other speaker, Tony Jefferson, a third-generation semi-professional beekeeper from the Whitby area, who specialises in the propagation of local black bees and the production of heather honey, gave presentations entitled *What the books don't tell you* and *Never waste a queen cell*. Although we had never met before, there was a considerable degree of consensus in our thinking about beekeeping!

Autumn Apiary Inspection



We had a fine day for our apiary inspection, which gave us ample time for some of our newer members to get some hands-on experience. We also welcomed a visitor, Wendy Haslam, from Claver Hill Community Farm, who are planning to create an apiary over the winter in readiness for Spring.

Meadow Mowing Day



Despite an ominous forecast, the weather stayed fine long enough for a small band of stalwarts to dig out the docks from the meadow and some of the hedges, strim and rake off the meadow, mow the club house site and clear weeds of some of the external fences. Once the strimmed meadow has been mown, to make the vegetation shorter, it will be sown with "meadow restoration" mix of native perennial and annual wildflower seeds.

Many thanks to David Wareing, George and Pamela Woods, George Williams, Fred, Glenis and Charlotte Ayres for their sterling effort.

Galbraith Trust



On the evening of 20th September, the Galbraith Trust held a celebratory evening in The Banqueting Suite of Lancaster Town Hall to celebrate the eighteen-year contribution made by the Trust to the local voluntary, community and social enterprise sector. In addition to some excellent hospitality, the evening involved a number of speeches, performances and

the opportunity to network with others in the sector. The Club has benefitted from two grants from the Galbraith Trust. The first enabled us to buy the container at the apiary and the second funded the exhibition gazebo. Trustees Fred and Glenis Ayres attended to represent the Club.

North Lancashire Business Expo

This year's Expo took place on Friday and Saturday, 20th and 21st September at Lancaster Brewery. The Friday event was focused on business to business and the Saturday event was focused on informing the public about the activities of local businesses. The Lancaster branch of Handlesbanken kindly allowed us to use their stand on the Saturday to showcase our activities.



Out apiary sites

We have been offered an excellent apiary site near Tatham in the Lune Valley and the possibility of another site in the grounds of the Heysham substation. If anyone is interested in either, please give me a call.

Drinking mates!

Many thanks to Michelle Lawson for sharing this super picture with us.



Preparing for winter

You should, by now, have completed your autumn colony inspections and ensured that your hives are as well prepared for winter as possible.

The first matter is to ensure that each colony has sufficient stores. Whilst your colonies may continue to forage until November or even December if forage is available and the temperature sufficiently mild, it is safest to assume that they will not. There was an old rule of thumb that stated that each colony requires 30lbs to 40lbs of honey to see it through the winter. However, in this part of the world hardly a winter goes by without the National Bee Unit warning of starving bees, which is the main reason why we do not advocate taking honey off in the autumn!

How much honey bees need to over-winter is difficult to calculate due to the range of variable factors such as the length of time they will be unable to get out and forage and the strength of the colony. Bees kept in well insulated hives also tend to be more active during the colder months and consequently use up more stores.



Feeding colonies with syrup solution is not an option during the winter months as the bees find it extremely difficult to reduce the moisture content sufficiently to be storable. Feeding fondant, sometimes known as candy, is the only practical option. However, as the bees cannot take down fondant or store it, it is a source of immediate food. This makes it important to ensure that any fondant is placed as near as possible to the cluster.

Although I live in a very rural area, I have never experienced a problem with mice. However, they are known to seek winter refuge in bee hives and can cause considerable damage during the period that the bees are dormant. You may, therefore, want to consider fitting a mouse guard or at least setting your entrance disc to "queen excluder" setting.

Finally, consider the security of your hives and the extent to which they can withstand strong winds. Placing the traditional brick on the hive roof may not be enough! Whilst heavily insulated hives might be too heavy to blow over, using straps to anchor your hives to a solid base, is a sensible precaution.



Another Asian Hornet sighting

An Asian hornet sighting was confirmed in the Tamworth area of Staffordshire on 2nd September 2019. This is the first report since July when a single hornet was confirmed in New Milton, Hampshire. Since 2016 there have been a total of 15 confirmed sightings of the Asian hornet in England and six nests have been destroyed. Nine of these sightings occurred in 2018 involving individual hornets in Lancashire and Hull (both in April), three in Cornwall, two in Hampshire and one in Surrey (all in September) and one in Kent in October.

The risk of an active Asian hornet nest being found in the UK is negligible during the colder winter months but higher during the summer. Asian hornets have already been spotted this year in France and Jersey, close to the UK, and a risk remains at all times of year of accidentally transporting an Asian hornet when returning to the UK from abroad. **It is crucial that you report any possible sightings so that appropriate experts can take quick and effective action to eradicate them.**

October meeting

Our next meeting will be on 16th October at the Scarthwaite Hotel, starting at 7-30pm when our speaker will be Catherine Mercer. Catherine is the Coordinator of the Bee Together project which aims to connect communities and landscapes to reverse the decline of wild pollinators, and in particular, wild bees. The project involves coordinating and delivering capital works and activity based projects along the B-Line from Lancaster to Leeds, connecting communities to create pollinator super-highways.

Club activities programme for the remainder of 2019-2020

- Wed 13th Nov** **Speaker Meeting** **Scarthwaite Hotel, 7-30pm**
Topic: Bees for Development **Speaker: Bob Spencer**
Bob is a Trustee of Bees for Development, an organisation that promotes sustainable beekeeping to combat poverty and to build sustainable, resilient livelihoods. It supports beekeepers to maintain environments that are good for bees, for biodiversity, and for people. Bees for Development works with local partners on community-based projects, and provides a wide-range of information services.
- Sun 17th Nov** **Managing woodland for pollinators** **Club Apiary** **10-00am to 4-00pm**
A one day practical course, run by Catherine Mercer of Bee Together, which will include **coppicing** and other practical skills.
- Wed 11th Dec** **Speaker Meeting** **Scarthwaite Hotel, 7-30pm**
Topic: The two frame nucleus and obtaining bees **Speaker: Fred Ayres**
Fred will explain the various ways of obtaining bees, together with their advantages and disadvantages, and then explain the two frame nucleus approach for those interested in increasing their colonies or wishing to participate in a club project around this next season.

2020

- Wed 8th Jan** **Social Event** **Scarthwaite Hotel, 7-30pm**
The evening will start with wine and cheese followed by another opportunity to see "*More than Honey*", a remarkable documentary film made in 2013 by the Swiss filmmaker Marcus Imhoof, which looks into the fascinating world of bees, and showing small family beekeepers and industrialised honey farms. "*More than Honey*" is a film on the relationship between mankind and honey bees, about nature and about our future. It is well worth watching.
- Wed 12th Feb** **Speaker Meeting** **Scarthwaite Hotel, 7-30pm**
Topic: The Woodland Trust **Speaker: Paul Littlewood**
Paul will explain the work of the Woodland Trust and provide advice on how we should manage the woodland at our Club apiary.
- Wed 11th Mar** **Speaker Meeting** **Scarthwaite Hotel, 7-30pm**
Topic: Thermoregulation in the hive **Speaker: Keith Bartlem**
Keith is an airline pilot, and experienced beekeeper. His talk will help to improve our understanding of how, why, and when bees monitor and alter the hive temperature and is particularly relevant in our usage of insulated hives.

Grass verges to be cut just twice a year



Under new Highways England guidelines issued on 27th September 2019, grass verges will only be cut twice a year. Currently, they are cut four times a year, which wildlife organisations argue is too much for rare plants to thrive.

Charities including the Wildlife Trusts and Plantlife drew up new road verge guidelines to ensure the patches of grass are as helpful to the environment as possible.

With 97 per cent of wildflower meadows having vanished in the last century, the verges that line 313,500 miles of UK rural roads, A-roads and motorways are an increasingly important source of meadow habitat. There has also been a 20 per cent drop in floral diversity since 1990, due to poor or inappropriate management. The new guidelines were drawn up with the advice of Natural England, Highways England, Transport Scotland and the Welsh Government.

Road verges are home to more than 700 species of wild flowers, including 29 of the 52 species of wild orchid found in this country such as the rare lizard orchid. However, these are currently cut too often for the plants to thrive. Not only are many of them rare and important to conserve, they are also sources of food for bees and rare butterflies. Additionally, while some are razed to the ground, others are not maintained at all and are left to turn to scrub, which also does not help to preserve flowers.

The less and later two-cut approach endorsed by these guidelines would replenish the seed bank, restore floral diversity, save councils money and provide pollinator habitat estimated to equal the size of London, Birmingham, Manchester, Cardiff and Edinburgh combined, according to the plant charity.

Red clover and lady's bedstraw, two of the six verge wild flowers that support the highest number of invertebrates - are amongst the plants experiencing the most rapid decline with adverse knock-on effects for wildlife. The marsh fritillary butterfly feeds almost exclusively on devil's-bit scabious, so lives or dies according to the prospects of its food plant.

Dr Trevor Dines, the Plantlife Botanical Specialist, said: "It's heartening to see road verges increasingly recognised as wildlife havens, rather than the inconsequential 'edgelands' that flash by in the car wing mirror as we speed ahead with our busy lives. Where once there was a desire to see verges scalped to the bone for that neat-and-tidy look, there's an increasing appetite for 'messier' verges that provide better cover and food for wildlife. As well as offering hope to some incredibly rare flowers like wood calamint and fen ragwort that now only appear on road verges, the shift in public attitudes, reflected in the huge support for the Plantlife petition, means we could see more familiar flowers like cowslip, oxeye daisy, knapweed, tufted vetch and even orchids on our journeys."

Learning from the Bees conference

The second international Learning from the Bees conference was held in Berlin from 31st August to 1st September 2019 and focused heavily on tree beekeeping. A two day practical Zeidler workshop preceded the conference. Here is a summary of the principal topics.

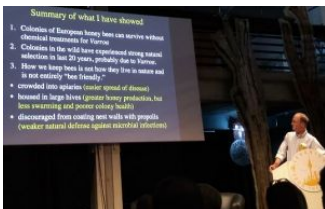
Zeidler



Zeidler (tree beekeeping) is a traditional husbandry technique, involving the creation of bee-friendly cavities in living trees and harvesting the honey from them. The practice was primarily Polish, but died out in most of Europe when rulers had the large forest trees harvested for industry and war. It hung on in remote Russian areas and is now being re-introduced by Polish enthusiasts and causing quite a stir amongst northern European beekeepers.



Wild bee survival traits



Professor Tom Seeley, who has pioneered the systematic investigation of wild colonies by trialling colony survival with groups of control hives, presented the following summary of what this research has proven;

1. Colonies of European honey bees can survive without chemical treatments for Varroa.
2. Colonies in the wild have experienced strong natural selection in the last 30 years, probably due to Varroa.
3. How we keep bees is not how they live in nature and is not entirely "bee friendly"
 - crowded into apiaries (quicker spread of disease)
 - housed in large hives (greater honey production but less swarming and poorer colony health)
 - discouraged from covering nest with propolis (weaker natural defence against micro bacterial infections).

He also found that populations which survived varroa were descended from just a few queens (by examining mitochondrial DNA, passed down female lines). However, the nuclear DNA showed almost as much variation as in the pre-varroa populations, i.e. male drones propagated and conserved the genetic heritage of the lines that "died out". So unlike bee strains selected by breeders, who select drones from "desirable" queens, naturally selected survivor colonies do not suffer from inbreeding!

Are conventional bee hives the problem?

In the first of two lectures, Torben Schiffer, a researcher who works with Professor Jürgen Tautz on the UNESCO funded Hobos Project (University Würzburg), said that by comparing colonies in tree cavities with those in hives, he found the survival rate of untreated (for varroa) bee colonies in Germany in conventional hives is exceedingly low, but put those same bees into bee-appropriate hives and the survival rate jumps to 60%.

He went on to show newly observed bee behaviours recorded by revolutionary video footage using an endoscope inside a hive. Apart from showing wash boarding *inside* the hive, which appears to be a behaviour to spread propolis and suppress mould, it shows a web of bees hanging under the combs guarding against intruders. They react instantly and balled wasps are pushed into the hive. It is suspected that they would also ball intruding hornets. He speculates that perhaps the only reason European bees are vulnerable to hornets is the European framed hive designs do not allow space for this behind the entrance. This under-cavity may not be that critical if the entrance has other defences, for example, comb right behind it where bees can cluster to repel invaders.

Value of propolis and insulation

Torben Schiffer's second lecture focused on the value of propolis and insulation.

His research showed that when bees maximise humidity round the honey processing area (concentrating nectar via evaporation), if that saturated airstream hits a *relatively* colder spot, the water will condense there. However, if you allow propolis to build up, and the hive is well insulated so this is above 10C, the propolis vapour inhibits mould. He went on to say that he has noticed that when bees build comb behind an entrance, which is normal in wild colonies, it is heavily propolised, which he suspects is to sterilise incoming air.

With regards to insulation, Schiffer stressed that it was important to have a sufficient mass of insulation to ensure that the conditions inside the hive remained as stable as possible.

Eco-floors

Geert Steelant, a Belgian beekeeper had a laptop hooked up to a microscope showing predatory *Stratiolaelaps scimitus* mites creeping around in compost. He has used them on the floors of his Dutch hives for 5 years to control varroa. He gave a 5 minute talk on this technique. This is a different predator to pseudo scorpions.



Over view

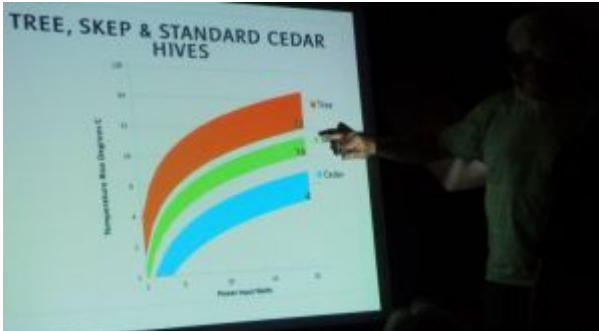
Although not quite as well attended as the first conference it was, nevertheless, regarded as highly successful by those attending and clearly demonstrated the enormous interest in alternative approaches to beekeeping from around the world.

The next Learning from the Bees conference will be in Dartington, Devon, in 2020.

This article is based on a posting by the Oxfordshire Natural Beekeeping Group.

Insulation and bee behaviours

Scientists are beginning to uncover *why* well insulated hives are so beneficial. Basically, hollow trees are so warm that the bees in them only need to gather *one tenth the fuel* to keep the colony going, compared to a conventional framed hive. It turns out that the bees do not just use the free time to gather more honey for a rainy day. Instead, they turn to cleaning the hive, propolis (sterilising) the walls, grooming mites off each other, and inspecting brood for signs of disease.



Much less power is needed to keep a colony warm in well insulated cavities

In other words, bees have a hierarchy of behaviours. The priority is gathering enough food to survive. If you keep them in cold hives, and keep taking their honey away, you suppress the others, the ones which keep them healthy.

You may want to pause and think about how unmanaged colonies thrive *despite* the lack of human help.

The initial research in this area was by Derek Mitchell in the UK. In summary, Mitchell, an instrumentation scientist, got thinking about his wife's hives, modelled hive heat flows on computer, and backed up his predictions with heaters in hives. He realised the immense impact insulation and absence of draughts had. Every kilo of honey requires the bees to bring in several kilos of nectar to make it, so small differences in insulation and draught proofing make a big difference to the stress on a colony.

Torben Schiffer, in Germany, has backed up Mitchell's theory with measurements on actual tree hive nests and confirms that a well-insulated tree colony may only have to gather *one tenth* as much nectar as one in a framed hive, that is 50kg instead of 500kg (half a ton!) a year. Long hives and Warrés are better than conventional framed hives, but still need considerably more nectar to run than a tree cavity. All hives and colonies benefit from extra insulation.

Not only has Torben Schiffer confirmed these results, but by observing bees in such nests he has discovered the behavioural hierarchy described above. He has also found that above 10C, propolis volatilises, suppressing mould growth and mites which gives another reason cold hives are unhealthy.

Torben is also researching how bees control humidity in hives. Warm air holds much more water vapour than cold. When ripening honey, bees warm the honey processing combs to 40C. If they can only warm them to 35C, the air will carry away 30% less moisture which means they need to work harder, by fanning more air, to remove water from nectar to make honey.

The other main point Gareth and Torben have been thinking about is that when swarms move into a cavity, they seem to build comb and breed at a rate to suit that cavity. The bees must use comb to optimise ventilation to suit the size and shape of the cavity, and position of entrance. It follows, then, that removing top boxes full of dense, warm honey and adding a new empty box above or below is going to disrupt things. Even changing the volume of a hive is going to change internal conditions because, after all, the hive is the skin of the colony.

Based on an article from the Oxfordshire Natural Beekeeping Group's newsletter.

A new vaccine for bee stings is successfully tested



When some people get stung by a bee, they suffer an allergic reaction known as anaphylaxis. The reaction can vary in severity but can be fatal if effective emergency medical assistance is not provided quickly.

Recently, a trial of a new vaccine containing Advax, proved successful in curbing severe and fatal allergic reactions. Initially, scientists designed the vaccine so that the

venom of honey bees found in Europe could be easily neutralised.

The reaction can be treated through a process of immunotherapy. This involves treating the patient with gradually increasing quantities of the allergic re-agent which results in the development of venom blocking antibodies in their body. Thus, if a bee stings them in future, antibodies will bind on the venom and prevent the occurrence of anaphylaxis.

To make the process of immunotherapy successful, it is essential to use an antigen which can trigger adequate immune reaction inside the body. However, if the antigen used is too weak the process will take longer time, be costly and may even reduce acceptability in a few individuals.

To curb this issue, researchers started to use adjuvant inside the vaccines especially designed against bee venom. This makes vaccines more effective and more lives can be saved. Advax compound is designed by using delta insulin which is a form of complex sugar. This compound does not lead to inflammation individually. The trial was used to observe the safety of HBVIT, when Advax and venom are combined with each other.

The trial was performed on 27 individuals who are allergic to bee venom. These individuals were given vaccine against bee venom. In some vaccine Advax was present while in others absent. After 30 months all the individuals were found to no longer have a severe reaction to honey bee venom.

American Foul Brood (AFB)

American foul brood (AFB) continues to spread in South Wales and another outbreak has been reported in Pitlochry in Scotland. It is also a serious problem in the USA where commercial bee farmers in Maryland lease colonies to pollinate crops across the country including almonds in California, blueberries in Maine and New Jersey and citrus in Florida.

In order to ensure and certify that each beehive crossing the state line is free of AFB, a number of sniffer dogs have been trained to sniff it out and can successfully do so whether or not the colonies are active or clustered. Over the course of autumn and winter each dog can inspect around 2000 colonies, which greatly speeds up the inspection process.



Beekeeping bananas!



Every so often beekeeping circles reverberate with the warning that you should never eat bananas either at, or before going to an apiary as bananas give off a smell which honey bees mistake for their alarm pheromone. Whilst the internet is full of claims by beekeepers around the world that they have been seriously attacked by their bees after eating bananas, serious academic research by Katharina Davitt in the USA concludes that whilst bees readily forage on banana flowers, they are indifferent to the fruit itself.

Another claim is that chalk brood can be reduced by cutting a banana lengthways, opening it out and placing on the top bars of the brood frames. Although many beekeepers report that it works, nobody seems to know why or how. Some claim that it encourages the bees to be more hygienic, so they clear out the mummies, making it look as if the chalk brood has reduced. Others say that it may be the decomposing banana is giving off a substance that is controlling the chalk brood. It is known that bananas release methane when breaking down which in turn could be interfering with the chalk brood process.



In this experiment the bees worked hard to remove the banana from their hive but, as far as could be seen, made no attempt to eat it. There was no noticeable effect on their temperament.

Yet another claim is that eating bananas can cause dysentery in honey bees. There may be some truth in this as bananas have a high ash content. Ash is the indigestible part of food that accumulates in the honey bee gut. It is composed of a variety of substances, including calcium, phosphorus, potassium, sodium, magnesium, iron, iodine, zinc, and sulphur. When bees are flying, this does not create a problem because the bees can defecate whenever they want. However, in the winter months when flying days may be weeks or even months apart, the ash continues to accumulate. At a certain point, if the bees can no longer contain it all, they are forced to defecate inside their hive, which is usually called honey bee dysentery.

A world without bees



In parts of China all the pollinating insects have been killed off by the excessive use of pesticides. As a consequence, pollination has to be done by hand at an enormous cost. Could this happen here?



The Dirty Dozen and Clean Fifteen

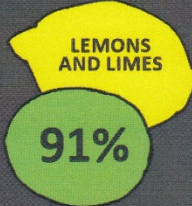
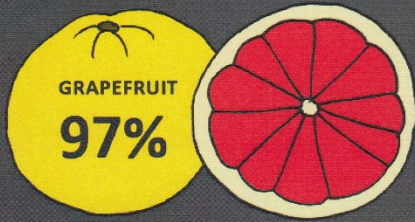
Many people, including beekeepers, have long been concerned about the effects of pesticides (insecticides, herbicides and fungicides) used in agriculture on pollinators and the wider environment. However, relatively little is said about their impact on our food. Recent research shows that pesticides can often leave detectable traces of chemicals, known as “residues” in, or on, our food. The residues detected on a food item will depend on which pesticides have been used and how persistent they are or, put another way, how long they take to decompose.

Driven by health concerns, the government monitors residue levels in food consumed in the UK. PAN UK (Pesticide Action Network UK) has analysed and compiled the most recent five years of government data and turned it into a handy list you can stick on your fridge or in your back pocket when you go shopping. A fully organic diet can be difficult and expensive to achieve but this ‘Dirty Dozen and Clean Fifteen’ list can help you to work out which produce to prioritise.

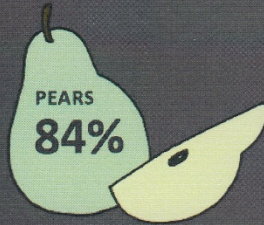


DIRTY DOZEN

% OF PRODUCE WITH MULTIPLE PESTICIDE RESIDUES*



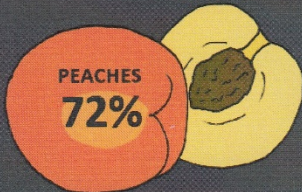
STRAWBERRIES



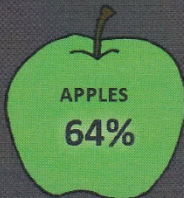
GRAPES



CHERRIES



ASPARAGUS



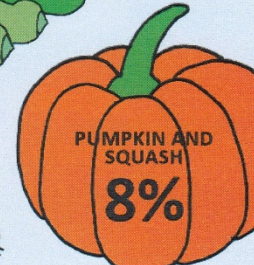
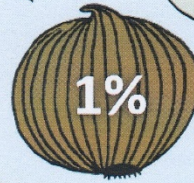
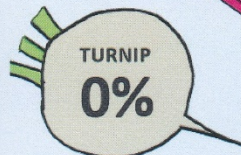
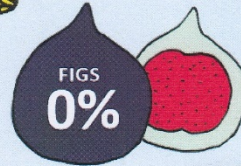
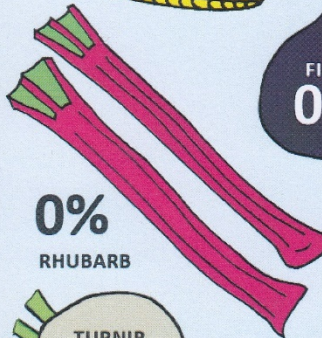
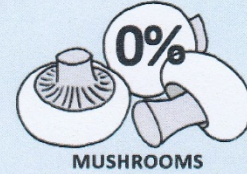
APRICOTS



* Based on 2012 - 2017 data for multiple residues published by The Expert Committee on Pesticide Residues

CLEAN FIFTEEN

% OF PRODUCE WITH MULTIPLE PESTICIDE RESIDUES*



Microbes on the menu for bee larvae

Recent research has shown that honey bees are not strictly vegan after all!

Reporting in *American Naturalist*, a team of Agricultural Research Service (ARS) and university scientists has shown that bee brood have a taste for "microbial meat." ARS entomologist Shawn Steffan and his colleagues at the University of Wisconsin, Cornell University, and Hokkaido University in Japan coined the term to describe an important ingredient in the brood's pollen provisions namely, the protein of beneficial bacteria and fungi.

The microbes are naturally occurring in the pollen and feed and multiply within it. In the process, they increase the pollen's nutritional value to brood by enriching it with amino acids, the building blocks of protein, that flowering plants alone may not always provide. "Bees actually require the non-plant proteins of these pollen-borne symbionts to complete their growth and development, which makes them omnivores," explained Steffan, with the ARS Vegetable Crops Research Unit in Madison, Wisconsin. In fact, the team observed an appetite for microbial meat among brood that spanned 14 species distributed across all major families of social and solitary bees, Melittidae, Apidae and Megachilidae amongst them.

The microbes don't just serve themselves up as critical sources of amino acids, though. They also secrete enzymes that help break down and age raw pollen into a more nutritious and digestible form known as "bee bread." Nurse bees may recognize this benefit and encourage the microbes' growth in pollen fed to brood, note the researchers in their paper. This microbial mix-mash may also check the growth of harmful bacteria or fungi that can ruin beebread or sicken the hive.

For their study, the researchers used isotope and gas chromatography-based methods to calculate the ratio of nitrogen in two types of amino acids (glutamic acid and phenylalanine) in the tissues of adult bees and in beebread. The team chose the method because of its accuracy in determining an organism's trophic position—where it stands on the proverbial food web of life based on the flow of nutrients and energy from producers to consumers of these resources.

In this case, the team's isotope analysis showed that bee brood's consumption of both plant and microbial proteins warranted raising the insect's trophic status from that of a strict herbivore to an omnivore. More broadly, Steffan said, the findings underscore the need to examine what effects fungicide use on flowering crops can have on the microbial make up of pollen fed to brood and, in turn, their development.

Beekeeping myths



Catching swarms in medieval Central Europe appears to have been a relatively simple matter. You choose the branch on which you want them to settle, shake it three times and then recite the following verse three times:

*Bee folk, settle here,
Do not go from this place,
I give thee house and place,
Thou must bring me honey and wax.*

Fred Ayres, Editor & Chairman
Tel: 01524 811978,
Email: fred@lunevalleybeekeepers.co.uk

The Lune Valley Long Hive

An innovative but simple long hive



Only £325

Only obtainable from Lune Valley Community Beekeepers

Essential features:

- Designed by bee-centric beekeepers for bee-centric beekeepers
- Comfortably houses one colony of bees without the need for additional supers or brood boxes
- Has a hinged roof to avoid the need for heavy lifting
- Can be managed by a person in a wheelchair
- Can be used with 14 x 12 frames (recommended), standard brood frames or top bars
- Has a removable floor tray which can act as a biological sump or a debris board for varroa counts
- Has 2" thick wooden walls which provide five times more insulation than a standard hive
- Roof space is ventilated and has space for a jumbo feeder
- Has a metal roof
- Is manufactured locally, especially for LVCB
- Is constructed from pine wood to reduce the cost but will need an external preservative or coat of paint
- External measurements: L 86cm, H 77cm, W 52cm
- Despite its high specification, it is economically priced whilst offering exceptional value for money.

Please help us by printing off the following notice and posting it wherever appropriate.

Ever thought of keeping bees?



If you have ever thought of owning a colony of honey bees but have been deterred by not knowing exactly what is involved, or how much time it might take, then this course is for you! This inter-active workshop focuses on responsible, low intervention, bee-centric approaches to beekeeping and will cover all you need to know to start keeping bees.

Sunday, 20th October, 2019

9-30am to 4-00pm

Scarthwaite Country House Hotel, Crook O'Lune, Lancaster LA2 9HR



For further details or to book a place visit

www.lunevalleybeekeepers.co.uk