

# IN PRAISE OF POLLEN

**P**ollen grains are the flowering plants' equivalent of fingerprints. They vary hugely in size, shape and surface features depending on species. Despite the variety the basic structure of pollen grains is universal in all flowering plants. They comprise a tough, highly resistant outer layer (the 'exine') and a more delicate inner layer (the intine). It is the size of the grain and the features of the exine that enables pollen to be identified under a microscope, to at least a genus, if not an exact species, of plant. Fig.1 shows the characteristic shape and features of Hazel pollen. Hazel pollen is significant since it has a very characteristic shape and size (25µm) and can be used to estimate the size of other grains if added to a sample.



Fig.1 Hazel pollen

Beekeepers, hay fever sufferers, plant breeders and forensic scientists all have a common interest in pollen. It's that stuff of many colours that bees pack away in the combs to use as a food source for actively growing larvae.

Hay fever sufferers will know that at certain times of the year they will be affected by wind blown pollen that produces an allergic reaction in their eyes and respiratory passages.

Forensic scientists may identify pollen samples from a suspect's clothing to place them at a crime scene location that has a distinctive flora, or to prove that, for example, heather honey is what it says on the label.

Plant breeders will collect pollen from selected flowers to artificially preserve, or to develop new, varieties of flowers, fruit and vegetables. Because of their extreme resilience, examination of pollen grains from core samples taken in, for example, peat bogs can also provide information as to how the flora of a particular area has developed over several thousand years.

All of this misses the key function of pollen as an important part of flowering plant reproduction. The transfer of pollen from a stamen in a flower to a stigma, either by wind or by insect (in the tropics other animals such as bats and birds are available) is the process of pollination and is the curtain raiser to a chain of events that results in the production of seeds in a fruit.

A basic problem to be solved is that pollen grains are delivered by pollination to the stigma of the female parts of a flower, whereas the ('female') ovules (that will eventually become the seeds) are at the base of the stigma. This may be a short distance or several centimetres depending on species.

So how do male and female cells get together? The answer lies in a 'pollen tube'. (See Fig.2 of Birch pollen tubes) Inside the intine is a packet of cell material (cytoplasm) that contains two ('male') nuclei. One of these nuclei is responsible for the development of



Fig.2 Birch pollen tubes

a root-like structure that is stimulated by chemicals in the stigma to grow towards the ovary containing the ovules. This is called a pollen tube. Once inside the ovary a single pollen tube will enter a single ovule and the other nucleus (now divided into two) will fuse with cells inside to produce an embryo and a food reserve – in essence a new seed.

A measure of how significant successful pollination can be estimated is to tip out the seeds from a ripe poppy head. Don't even try to count the seeds that pour out – but there are likely to be several thousand! Every seed is the result of the fusion of one pollen grain with one ovule. Next time you open a pack of frozen peas (don't count those either) thank a bee for delivering a pollen grain for each pea in the pack.

Barry Meatyard



# MUSEUM BEES HAVE NEW QUEEN

**F**or around 80 years, Warwick Museum has featured a viewing hive, allowing visitors a glimpse into the wonderful world of beekeeping that we are so lucky to be part of. The hive occasionally requires the introduction of a new queen to maintain the colony's health, and this process was recently completed under the supervision of Mike Townsend.



The hive was temporarily removed and transferred to a nuc where a new queen was introduced. After the new queen was established, Mike transferred the hive back into the museum display case, supported by Barry, Peter and Chris.

Mike shared a valuable tip during the transfer: laying a white sheet on the ground. This strategy ensures any bees that fall to the ground are easily visible, preventing accidental harm. This

proved crucial when the new queen fell from the frame during the transfer, but thanks to the white sheet, she was quickly spotted by Peter before she was injured or lost in the grass. Without this precaution, the new queen could have been lost, jeopardising the success of the entire operation.

The hive is now back in its place at Warwick Museum, flourishing under the reign of its new queen. Visitors can observe the queen marked with a white dot.

The museum hive has several unique features, including an in-built feeding tank hidden in the top of the frame. This allows museum staff to feed the bees without having to open the case. Additionally, the hive is equipped with screws on the sides to lock the frames in place, as well as bolts hidden within the case that, when turned, force the sides to open and break any propolis holding the sides shut. This makes accessing the hive for maintenance much easier.

It was a pleasure to play a small part in this long-standing tradition that will hopefully ensure the hive remains a popular educational exhibit for visitors, as well as perhaps encouraging the next generation of Warwick and Leamington beekeepers!

**Chris Beaumont**



# DALEHOUSE LANE CLEAN UP SQUAD

**I**t's amazing how much you can achieve with a strimmer, and even more so if you have two operating. Initial disappointment at the response to our request to members to support a Working Party to tackle the years of neglect to our apiary site at Dalehouse Lane, hadn't reckoned with the industry of the four who did turn up.

From nearly waist high to the level seen in the photograph, the grass and weeds on this and two other areas were overcome within a couple of hours by Terry Smith and Andrew Crompton.

All the while this was going on, Nigel Woolley was repairing the guttering on the Grimshaw shed and cutting back the overgrowth to reveal the paving stone path to the Composting Loo shed, while Mick Smith was in the loo connecting the urinal and cleaning up debris after the removal of a mega wasp nest. Repairs to a rotting post supporting the field shelter also managed to get done.

Plans, abandoned in the light of the volunteer response to give both the Grimshaw shed and Composting Loo shed, coats of preservative, could, after all, have been included had we bought the materials.

Instead, we tackled getting our two geriatric mowers started



in which we were successful, if only temporarily. A start made on clearing some of the unwanted kit from the cabin by the guys for disposal, completed a very productive morning and created the incentive to return to tackle the other jobs. Perhaps you will volunteer for these? Keep an eye on your inbox for details.

# PUTTING ON A BEE-UTIFIL SHOW



Open Farm Day at Middle Watchbury Farm in Barford

**O**pen Farm Day is an annual country wide event where farms open their fields and buildings to the public to give awareness of where their food comes from. It is held in June, at the point in the year when all the young offspring of the farm have been born and are ready to meet the public.

Middle Watchbury Farm in Barford has invited us to come along for the past two years and this year we were pleased to attend again. The weather was cool, but it didn't stop lots of people from visiting. The children loved to meet the new born lambs and goats and to be able to climb all over the farm machinery. There were ponies, horses, sheep shearing to watch and lots of food to eat.

We put on a full show – the observation hive, honey tasting and sales, wax candles for sale and candle rolling, flying bees demonstrations, Asian Hornet information and lots of things for the children to do, such as making their own badges, the life cycle of a bee dial, colouring in hexagons and attaching them to a giant frame and bee-themed Father's Day cards.

The following weekend we spent at Compton Verney. A majestic house set in a wonderful landscape next to a beautiful lake and with acres of wild flower meadow to enjoy.

Until this year the BBKA has always run this show, but this year they handed it over to us and we feel we presented a very family-tailored event that was well received.

The cool weather had a slight effect on visitor numbers on Saturday, but Sunday brought out lots of people who were very interested in everything we did, from the national concern of the Asian Hornet, which is now gaining awareness by people who are not beekeepers, to honey tasting and sales and lots of children's activities.

Our newest activity for children of collecting pollen is fast becoming one of the favourite things for them enjoy. They just love running around the grass collecting pompom 'pollen' in their little 'pollen sacs' attached to their legs, and it was delightful to see them running across acres of grass which was dotted with pompoms of orange in many shades and returning to the hall



Outside and inside (below) at Compton Verney



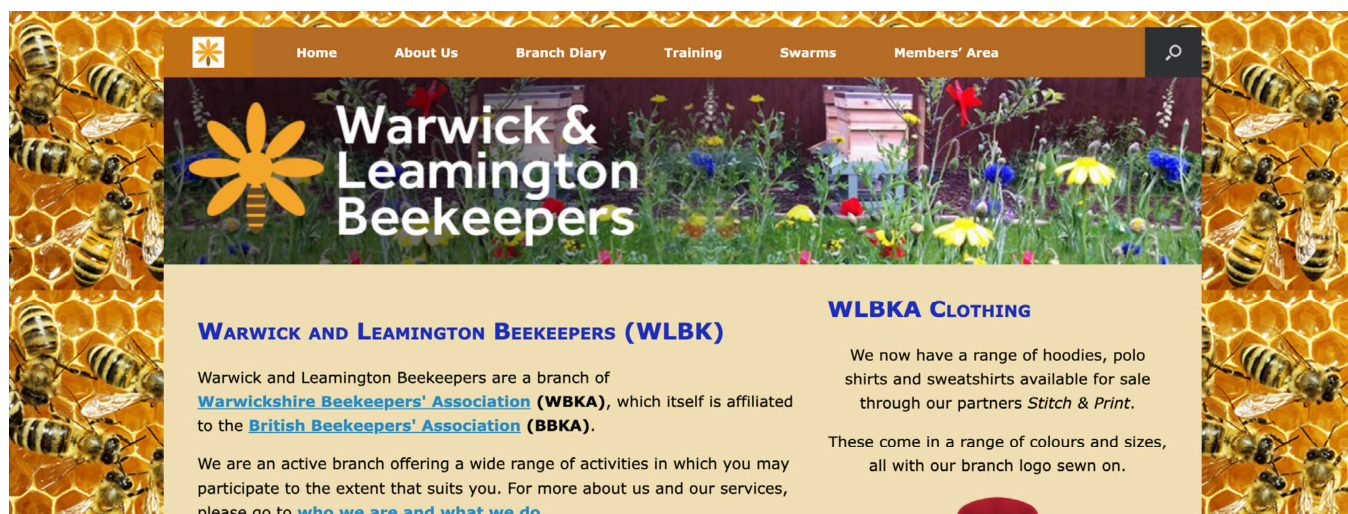
to unload them and race off again to collect some more. Those responsible for distributing the 'pollen' were kept busy all day.

They also made badges and rolled candles, besides colouring in bee pictures for the little ones and having a story read to them by Betty and others. Another busy, but very fulfilling weekend.

Many thanks to all those who joined us to support our activities, your help is very welcome. We hope you enjoyed both Barford and Compton Verney as much as we did.

**The Shows Team**

# A TOUR OF THE WLBK WEBSITE



Judging from the number of enquiries received by the branch's officers for information available on the website, Bee Talk is running a series of articles conducting us around the various pages and highlighting their content to promote the value of this facility. We are starting in this issue with some background to the creation and journey of the website thus far.

Our website was the brainchild of the late Tim Foden, one time Chairman and Branch Secretary. It all started way back in the twenty noughties when such things were very new and, indeed, a little controversial within the Branch. Communication with members still relied heavily on the postal service. Tim had the foresight to pursue this new medium and, self-taught, he recruited a web manager to do the technical stuff, whilst he, himself, sat down to create virtually all the content.

We all know how things have developed in this sphere and the sophistication of the website advanced in leaps and bounds predicated by the explosion in membership numbers. The graphics of the website were completely revamped when Ray Summers took over as website manager and he and Tim worked closely in modernising the whole thing.

The website was very much a legacy left by Tim to the branch and the work has been carried on by Roger Warham, who took over from Ray, who, in turn, was superseded by David Wray, the current web master, who is revising and developing it further.

David would welcome any feedback from the wider membership on its content and presentation, so please do email us your feedback.

Next month we shall explore The Co-op Purchasing Page.  
**Ivan A Perry**

## SEPTEMBER'S TASTER DAY

This year our Taster day will be held at BBKA headquarters at Stoneleigh on Sunday 1st September. We currently have 12 people fully paid up and are hoping for some more delegates to appear from displays, shows and of course your recommendation to work colleagues and friends who have shown an interest in our craft. There will be a cap of 25 attendees for practicality.

We will need some help to run these days if they are to be the success they usually are. The tasks with which we need assistance are as follows:

- Someone to organise the washing of the bee suits after the event and to ensure that they are returned to their rightful owners promptly. We do not expect one person to wash all the suits but do need someone to co-ordinate this task.

- We will also need extra hands to assist with the apiary session in the afternoon as we plan to have one experienced beekeeper per 5 attendees. We are hoping to hold the apiary session at BBKA headquarters but are awaiting confirmation of this.
- If you feel like giving a talk to enthusiastic potential beekeepers, please let us know and we will find a session for you (basic presentations are available for your use). It is always good to find new presenters. It is a very enjoyable time with the delegates always ready to learn.

If you think you might be able to help with any of the above, please do get in touch with us: [paul@paulday.co.uk](mailto:paul@paulday.co.uk) or [jane@j-richmond.co.uk](mailto:jane@j-richmond.co.uk)  
**Paul Day and Jane Richmond**



# WE'RE OFF TO THE HEATHER



**Y**es! It's that time of year again. Love it or hate it, heather honey is a popular honey on the sales table at our shows and attracts a premium price. For some, it is the only honey to use in honey cakes and has proved a particularly successful ingredient in those submitted at our various honey shows.

Branch members have been wending their way north for many years now to take their bees to the heather moors of the Derbyshire Peak District in the hope of getting some heather honey. This pilgrimage usually takes place during the first or second week of August with the hives being brought back about a month later. It is quite any easy journey, up the M1 and through Chesterfield to a farm overlooking the heather moorland at the back of Chatsworth House.

In preparation, you need to consider the strength of your colony. It should have bees over every frame, and I do mean a good covering of bees over each one, be queen right, of course, and have at least two full brood frames of stores even if it means feeding them beforehand. A high proportion of young bees with near wall-to-wall brood is ideal. Rearranging frames with unsealed brood to the outside and sealed in the centre, allows the queen to lay in the centre as workers emerge forcing honey to be taken up into the super.

Based on the last couple of years' experience, you should take a couple of supers initially. An interim visit after 2-3 weeks to check on the filling your supers is prudent but members who intend making this journey will often check on other member's hives and add supers if you let them have empty ones.

Being thixotropic, heather honey won't spin out as runny honey does and so the usual way hobby beekeepers extract heather honey is by cold pressing. The heather honey comb is cut out of the frame, wrapped in a filter cloth and inserted into our very own heather press to squeeze the honey out. Wireless thin foundation is best for the supers as not only does it enable you to make delicious cut comb honey, but also makes extraction so much easier. Our co-op stocks this foundation.

In fairness to other beekeepers, you need to be satisfied your bees are disease free and understand they will be placed on the moor amongst bees from all around the country with accordant risks. The farm we go to is about 1000ft up so the lighter coloured Italian bees and variations of them may not do so well as whilst we may be enjoying refreshing, warm, light rain at home, up on the moor it is

cold horizontal stair rods.

Your hive will need to have a travelling screen and be secured with two proper hive straps or ratchet straps. The floor, particularly the Thornes budget varroa floor, needs to be checked for leaks (of bees) with the entrance blocked with a strip of foam; not tape or wood etc. Pay particular attention to the back part of the floor for which Thornes give you a few drawing pins to fix the mesh in place. This is not good enough as when hive straps are tightened the mesh floor lifts and bees come flying out at the back. Staples or large headed (clout) nails are required to fasten it securely.

Bees can suffer badly in the August high temperatures particularly if confined for long periods or held up on the journey to the heather. So, traditionally, we have left Warwickshire around 5.00 a.m. thus avoiding the heat of the day and traffic. When transporting bees, wedge the brood frames with foam or cardboard to prevent them flapping around and place the hive with the frames orientated in the direction of travel i.e. from front to back of the vehicle.

The site is secure with reasonable access for an average car driven carefully along a mile-long, seriously pot-holed track, past the farm to a field at the edge of the moor. However, the field is steep and rough leading to where we keep the bees which can sometimes also be rather soft. We now have a hive barrow which can be borrowed to make it easier for members who do not have four-wheel drive/high ground clearance vehicles to carry their hives the short distance where ground conditions may be difficult. It is a modified Thornes barrow adapted to deal with the terrain.

Hive stands are not required and are unsuitable for the terrain. However, hives do need to be off the ground and what works very well are short pieces of timber about 75mm x 75mm so offcuts of old fence posts are ideal and, if they are cut to a length to fit inside a roof, makes packing in the car easier. Four of these together with a few short pieces of small timber offcuts facilitates levelling of hives.

Having set the hives up, it is again traditional to have breakfast - in my case a cold bacon sandwich and flask of hot coffee around 7.30 - 8.00 a.m. overlooking the purple cloaked vista of the moors. Magical! This all adds to the sense of adventure associated with the entire exercise. For those who seek a little more comfort, there is a Premier Inn located at the junction of the mile long, pot-holed track and the main road.

For this year the arrangements will be as follows:-

- Indicate your interest in taking some bees to the heather by completing the form at this link.

[Bees to the Heather - Expressions of Interest \(google.com\)](#)

- There is scope to share transport with other members. Indeed because of the terrain and unpredictable weather, it is strongly advised that at least two of you team up to go to the heather to help with the manhandling and for safety reasons, this is particularly relevant when returning with your hives and, hopefully a bumper crop.
- You can indicate whether you need a lift or can share space in your vehicle on the expression of interest form and we will try to match you up.

- We will be in touch with the farmer towards the end of July to ascertain the state of flowering of the heather and will alert members when it is appropriate to make the journey
- We will provide you with contact details and a map nearer the time.
- The 'rent' paid directly to the farmer is one 1lb jar of honey per hive taken.

We hope you will want to try heather going. At the very least you will be able to use the trip as an opportunity to explore this part of the Peak District which includes Chatsworth House just a few miles down the road.

**Mike Townsend and Bernard Brown**

## HINTS AND TIPS

Mike Townsend and Clive Joyce gave a presentation some years ago but I feel all these points are so relevant today.

- Check the spring piece in porter bee escapes before fitting them. When bought they are often too big- the width of a matchstick is a good size.
- Don't be tempted to select out those well filled frames by brushing off the bees. This can lead to anxiety in the hive. It is much better to remove the whole super when it is ready.
- Pallet wrap is a superior cling film and very useful for storing full supers before extraction. It is also good for wrapping frames after they have been treated in the freezer for wax moth.
- When cutting comb make a cardboard template and cut to size using a small very sharp knife. As you lift the cut comb our shine a light behind to enable the wire to be pulled out carefully, if necessary. Remember to put the best side up!
- Put cut comb in the freezer to prevent granulation.(Remember to defrost it before the honey show!)
- Left over pieces from the cut comb frame can be crushed with a potato masher and jarred- lovely on hot toast!
- Mash up granulated honey in the comb and heat at 40 OC for 3 days to separate.
- When extracting, spin slowly to start with and then gradually build up speed for maximum honey yield.
- Tip the honey bucket, towards the tap, to maximise the number of jars that can be filled without scum.
- Fill your jars a bit fuller than is necessary so you have extra to remove the scum that will settle on the surface. Use cling film to remove those last few little bits off the top.
- When pouring creamed honey warm the jars to prevent lines forming. Remember to lay the jars on their side if using a fan assisted oven to prevent the debris from being deposited in your jars.

Now it is your chance! If you have any hints or tips that you would like to share, please send them to

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**Helen Essex**

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