Brighton & Lewes Beekeepers Newsletter

Volume 3 - March 2018

Editor: Norman Dickinson

BRIGHTON AND LEWES DIVISION OF THE SUSSEX BEEKEEPERS ASSOCIATION

www.brightonlewesbeekeepers.co.uk

Next winter meeting - Wednesday, 21st March 2018

Our final winter meeting of the season has a lecture by Chris Parks entitled skep Beekeeping . This should be a very fascinating talk as Chris gave a lecture entitled 'The Honey Island and Baskets of Bee' at the SBKA AGM hosted by B&L in 2016 which was well received by all.

Gardening for Pollinators by Amanda Millar - Report and photo by Norman Dickinson

Amanda gave a fascinating and extremely educational talk on gardening for pollinators, which covered the full range of pollinators from all species of bees through to beetles and flies. Amanda also emphasised the importance of the larval stage of some insects which can also be an important means of pollination.

There are a number of major threats to our pollinators, ranging from the loss of forage and habitat through to the use of pesticides and fungicides and to also include imported pests and diseases and climate change.

We can all help the pollinators in the way that we manage our gardens, for example not hard cutting hedges and creating a small patch of wild meadow. The type of plants we use also has an effect, and we should go for more open flowering types and avoid F1's if possible.

Amanda has kindly provided a number of references and website addresses, which are all included on pages 3 & 4 of the newsletter.

We must thank Amanda for stepping in at short notice to give this fascinating talk after Mike Williams unfortunately had to cancel.

Amanda advises

When putting sterilised frames in an out apiary shed one cold day in Feb, I saw a Shrew running round the plastic tray in which a brood box with drawn comb was sitting. The board covering the top had moved leaving a small gap. Lifting the brood box a large pile of leaves fell out. I carefully replaced the box, and the gap, with the shrew back between two frames, as they eat small pests. Yes, I know I shall have to recycle the frames in the spring but I am rather fond of shrews.

With a bit of luck we may be able to make a quick inspection later in March if it reaches about 12 °C and light wind. Clean Cover cloths will help keep the warmth in. I have already seen them all taking in crocus and snowdrop pollen so am sure they all have brood but in this brief first inspection I shall concentrate on seeing if this is worker brood (hopefully no drone, indicating either queen loss or drone laying queen) and that they have space for the queen to lay in. From my last inspections in the autumn I already know which ones will need a shook swarm to replace all the dark frames in April, or just a few old frames which can be changed over the next few weeks before the brood area expands back into them making it more complicated. If there are dark frames with no brood and virtually no stores at this first inspection, I shall move them to the edges of the box, moving in any clean drawn comb which has or did have stores, adjacent to the cluster. This first inspection will confirm how many new boxes and frames I need to prepare with foundation or drawn comb. At the following inspection I shall remove these dark frames and replace with either sterilised drawn comb if I have enough or foundation to fill the space. Several of mine which are on more than one box, I expect some will have moved up leaving a box with empty dark frames which I can remove entirely. This is how most of my colonies end up on all shallow framed boxes; it does simplify things greatly. Inserts which I put in for a week in early February gave an indication which colonies needed varroa treatment and I have already dusted the few with a higher count than I would like. Most had less than two a day drop but one dropped 7 a day and needed urgent treatment and I was fortunate to have suitable weather to dust them twice in late Feb, when they dropped 43 each time. It will help, but unfortunately we are to have a spell of very cold weather so will have to wait before further treatment.

Mine already have insulation in the crownboard but this forecast of an arctic blast with wind chill of minus 10°C will be hard on the bees as the winter bees will be dying off in March and yet they have increasing areas of brood to keep warm. All I can do is put the inserts in to reduce the freezing wind and may even block the back of the insert with a cloth to reduce the draught further. Continue to heft the hives and hope they have enough stores.

I must put up a hornet/wasp trap very soon as the queens will be desperate for something sweet when they come out of hibernation in early March and it may be a chance to prevent them founding a new colony.

Science notes.

There were several papers published in February concerning the adverse effects of honey bees on wild pollinators. Although strategies such as reduction of pesticides, and increased flowering plants, will help honey bees and all other pollinators, the fact remains that honey bees massively out-compete other pollinators especially when crops have finished and they move out into surrounding natural habitats and have been found to reduce the densities of wild pollinators around apiaries. Wild pollinators can account for 50% of pollination services, yet half of all European bees are threatened with extinction. It is time research focused on the declines of native pollinators and the potential negative role of managed honey bees, matching pollinator supply with demand and achieving safe and sustainable densities of managed honey bees and a conservation strategy which focuses on the main drivers of the current declines in wild native pollinators and not on agricultural yield. Cambridge University scientist believe we should be thinking of honey bees as livestock not wildlife: having more honeybees does not save native pollinators, quite the opposite. Elsewhere I found that research suggests that a maximum of 5 colonies per km² will maintain a balance of pollinators. Several years ago this figure was exceeded in Brighton and there are twice as many as that in London. Fewer, healthier colonies should be the aim.

Gardening for Pollinators, Summary, References and Links Amanda Millar, November

Pollinators – Beetles, Flies, Moth and Butterfly, Solitary and Honey Bees
Threats – Loss of forage and habitat, pesticides, fungicides, imported pests and diseases, intolerance, disturbance, climate change
Needs – Year round pollen and nectar, nest sites, larval food plants, nesting material, sensitive management, connectivity, hibernation sites, Tolerance
Management – Manage existing grassland, Improve existing grassland, Create new meadows (annual, perennial, native, non-native), Ornamental planting, Prairie planting, Verge cutting regime, Hedge cutting
Other considerations - Short/long tongues, Soils, Appearance, Equipment, Cost, Honeybee competition
Flowering plants –Pesticide free, No hybrids or doubles

Seed sources using native source:
Eg: Flowerscapes
Meadowmania
Euroflor
Yellow Flag Wildflowers, Gloucester, very well packed, reasonably priced www.wildflowersuk.com
Colin Reader, Sussex sourced seed, https://www.wildflowerlawnsandmeadows.com/

Plants lists, sowing advice:
https://www.rhs.org.uk/science/pdf/conservation-and-biodiversity/wildlife/rhs-perfect-for-pollinators-garden-plants.pdf
Google 'Pollen and nectar rich plants for your garden by season' from BBKA, not accessible via their website.

Emorsgate seeds sowing and aftercare https://wildseed.co.uk/page/sowing-and-aftercare

Habitat Aid https://www.habitataid.co.uk/ (paste into browser, link does not work) Useful list of seed mixes for various soils etc.

Pollinator plant list
http://www.foxleas.com/uploads/files/Pollinators%20list%20for%20Wales.pdf
and http://www.foxleas.com/planting-for-pollinators.asp

List of seed merchants:
http://www.bristol.ac.uk/media-ibrary/sites/biology/migrated/documents/seeds.pdf

Management advice:
Flora Locale, land restoration https://www.floralocale.org/HomePage

Useful pdfs on Gardening for bees and details about solitary bees http://hymettus.org.uk/information_sheets.htm
http://www.magnificentmeadows.org.uk/

Butterfly gardening:
https://butterfly-conservation.org/files/habitat-gardening-for-butterflies-and-moths.pdf
https://butterfly-conservation.org/files/100-best-butterfly-nectar-plants.pdf
https://butterfly-conservation.org/files/caterpillar-food-plants.pdf

Road verges and wildlife management Guidelines, Plantlife:
https://www.plantlife.org.uk/application/files/4614/8232/2916/Road_verge_guide_17_6.pdf

Managing community spaces and gardens with wildlife in mind: https://www.lincstrust.org.uk/sites/default/files/flowers.pdf
Useful 86 pg booklet on Habitat creation and Management for Pollinators, aimed mainly at farmers:
https://www.ceh.ac.uk/book-habitat-creation-and-management-pollinators

A guide to ecological green space management in urban and peri-urban areas. Helping wild bees and nature find a home in the city. 2015, plant lists, case studies. In English, results of study around Lyon, but very applicable
http://urbanbees.eu/sites/default/files/ressources/Guide_Ecological_Green_Space_Management.pdf

Buglife, Managing Urban Areas for Pollinators:
https://www.buglife.org.uk/sites/default/files/managing%20urban%20areas%20for%20pollinators.pdf

Gardening for Pollinators, Summary, References and Links Amanda Millar, November

Managing hedges to benefit pollinators:
http://www.cfeonline.org.uk/managinghedges_online/

Bees and Development landscaping options: https://www.npt.gov.uk/media/5099/bees_and_development.pdf

Pollinator Projects and other information:

75% loss of flying insects in last 27 years, 'Ecological Armageddon'
https://www.theguardian.com/environment/2017/oct/18/warning-of-ecological-armageddon-after-dramatic-plunge-in-insect-numbers

Bristol University Urban pollinator project 2010-2015
http://www.bristol.ac.uk/biology/research/ecological/community/pollinators/links/

Note about Brighton and Hove butterfly havens etc. https://gateway.dorothy-stringer.co.uk/public/Lists/NewsLetters/DS_DisplayForm.aspx?ID=1001&ContentTypeId=0x0104009D6111B89BA0964A948D9B9202D6C163

Gardening in the Global Greenhouse: The Impacts of Climate Change on Gardens in the UK, Report 2002:
http://www.ukcip.org.uk/wp-content/PDFs/Gardens_tech.pdf

RHS Greening Grey Britain report 2015
https://www.rhs.org.uk/communities/pdf/Greener-streets/greening-grey-britain-report.pdf

Various projects:
http://www.thelivingcoast.org.uk/news/wildflowers-for-the-people
http://www.brightonandhovenews.org/2017/06/10/the-butterflies-of-brighton-and-hove-have-got-it-covered-exclusive-report-part-1/
http://www.kentwildlifetrust.org.uk/sites/kent.live.wt.precedenthost.co.uk/files/RNR%20leaflet.%20For%20website.pdf

Books:
Plants for Bees, Kirk & Howes, 2012
RHS Companion to Wildlife Gardening
Meadows, by Christopher Lloyd, of Great Dixter fame

2018 National Honey Show

NATIONAL HONEY SHOW NEWSLETTER FEBRUARY 2018

Save the Date!

Plans are well underway for the National Honey Show being held at the inspiring location at Sandown Park, Esher on **October 25th-27th** this year.

The National Honey Show will have a stand at the upcoming Beetradex event on March 3rd, so why not come along and find out more. We will have the flyer leaflets available for collection; and we can send these to you as pdfs. The raffle tickets will also be available for collection at Beetradex.

The main lecture programme this year will feature Michael Smith, winner of the Ig Nobel Prize for his ability to make people laugh; and Clarence Collison, author of the book, "What Do You Know" and current author of the Bee Culture magazine column "A Closer Look".

The Beginners Programme last year was a tremendous success and were hoping to build on that this year with an inspiring programme delivered by Lynfa Davies (Welsh Beekeepers), Anne Rowberry (Avon Beekeepers), Bob Smith (Kent Beekeepers) and Roger Patterson (Sussex Beekeepers)

Please come along to the National Honey Show stand at Beetradex, to find out more about the show, talk about the trade stand spaces that will be available this year, exhibiting in the many classes in the schedule and the extensive workshop programme.

Silence of the Plants - Gerald Legg

Silence of the Plants

Gerald writes that he has just read a very disturbing article that deserved a mention in the Newsletter. Disturbing notes from 'Silence of the plants'

Not only pesticides by ozone and nitrous oxides from vehicles (notably diesels) are having a terrible effect upon the plant fragrant language of plants. They use complex volatile chemicals (VOCs) to 'talk' both to other plants, to insects and ultimately - us. The fragrance language is under threat from air pollution - it disrupts the floral scents turning them into gibberish. Many plants use the chemicals to warn of attack by insects for example and to attract insect pollinators. Polluted air effectively virtually silences these scents: what could be detected by insects kilometres away can only be sensed metres away. The effect is fast and over-powering - the pollutants destroying the VOCs. Even we can detect the effects as many garden plants in urban areas have a much weaker perfume than those away from pollutants. It is even thought that air pollution could be a factor in reducing the numbers of flying insects and reducing their ability to find and pollinate plants. In German nature reserves the past 27 years has seen a 75 percent decline in insect numbers. For more information see NewScientist 17 Feb. 2018.

NewScientist 17 February 2018

As car owners and drivers many of us we are a big part of the problem. Even if we don't drive or have electric vehicles we can not escape criticism - how is our food and goods transported, power produced?

A copy of the full article is included at Page 7

Asian Hornet Watch App - Dominic Zambito

Dominic informs me that the Centre for Ecology & Hydrology (CEH) scientists have developed an app which allows beekeepers and others to quickly report sighting of the Asian Hornet, full details of which can be found at https://www.ceh.ac.uk/news-and-media/news/asian-hornet-monitoring-takes-flight-new-app-developed-ceh-scientists
For installation on an Android phone go to https://play.google.com/store/apps/details?id=uk.ac.ceh.hornets or for an iPhone go to https://itunes.apple.com/gb/app/asian-hornet-watch/id1161238813

Bees for Development

Bees for Development has been supporting bees and beekeepers world-wide for 25 years. To celebrate we are offering Birthday Giveaways every month throughout 2018. In January Julie Scott from Swingfield in Dover was the lucky winner of a complete Thorne National hive worth over £400.

February's prize is a luxury hamper generously donated by BJ Sherriff containing a Sherriff Handy Hood veil with an assortment of British heritage goodies and treats. For a chance to win, simply enter your details here **www.beesfordevelopment.org/giveaway/index.html**

Bees for development

Silence of the Plants - Full article sent in by Gerald Legg

The strange and fragrant language of plants is being destroyed by human activities, finds Marta Zaraska

In the classic post-apocalyptic novel, *The Day of the Triffids,* giant plants terrorise humanity. Triffids can walk and are equipped with venomous stingers, but the real power lies in their ability to Communicate and so plot against us.

It sounds far-fetched, but since John Wyndham's book was published in 1951, one aspect of this fiction has proved to be science *fact:* plants do talk to one another. If you stroll through a forest and take a deep breath, you can smell the "words" - complex volatile chemicals such as beta-pinene, which smells fresh and piney. Plants produce thousands of these, combining them to create "sentences".

However, this fragrant language is under threat. Air pollution is disrupting floral scents, turning their messages into gibberish. Not only is this having an impact on plants' abilities to survive, it is also bad news for pollinating insects-and for us, because it affects everything from crop yields to the smell of our favourite flowers. Luckily, there is a way we can help our botanical friends fight back.

It has long been known that insects such as pollinators and pests can distinguish between plants by the unique bouquet of chemicals they release. What's new is the idea that plants use their emissions to talk among themselves. "Plants release volatile chemicals into the atmosphere-these can be viewed as a Chemicals can be viewed as 'speaking' and the plant receiving them as 'listening' and then responding," says chemical ecologist James Bland at the University of Eastern Finland.

Many plants warn one another of an impending pest attack. When a tomato plant is infested with cut worms, for example, it releases a cocktail of volatile chemicals into the air that is picked up by others nearby. On "hearing" the warning, these tomato plants respond by producing glycoside. which triggers the release of a poison to ward off the hungry caterpillars.

Other plants use a similar approach to summon help from friendly insects. When aphids infest soya beans, for instance, the plants sound a chemical "burglar alarm" that brings ladybirds to the rescue.

Now we are discovering that air pollution can disrupt these communications.

In one study, Blande and his colleagues put individual bumblebees into a chamber containing paper flowers resembling those of black mustard. When the scientists injected the scent of real black mustard flowers that grew in either a clean or polluted atmosphere the bumblebees' reactions were unequivocal: they were immediately attracted to the unpolluted scent, while that from polluted air left them buzzing around aimlessly. What's going on? In the past few years, ozone and nitrogen oxides have emerged as emissions, with diesel exhaust a particular problem. Both ozone and nitrogen oxides react with the volatile chemicals released by plants. This changes the smell of their bouquet by degrading some compounds in the mix more readily than others. When monoterpene limonene, a common "word" of oranges, is mixed with ozone, for example, it degrades into as many as 1200 different compounds.

Such degradation can happen surprisingly fast. Ecologist Robbie Girling at the University of Reading, UK, and his colleagues exposed eight common compounds produced by flowers to diesel exhaust. "What we weren't expecting was the speed with which these reactions seem to be occurring, "he says. "Within a minute, which is the shortest time period our method could resolve, we couldn't see anything of one of the compounds. It was instantaneously undetectable."(See "When plants talk dirty", page 34)

It's not just the clarity of plant language that gets disrupted, the "loudness" is affected, too.

The scent of plants simply can't travel as far in polluted air as in pristine conditions. To find out how much things have changed since pre-industrial times, Jose Fuentes at the University of Virginia and his colleagues made a computer model that included historic air pollution levels. It revealed that scents produced by flowers that could once be picked up kilometres away now travel as little as 200 metres.

Even between clean and dirty environments today, a similar reduction in signal can be seen. Take lima beans. When one plant is attacked by spider mites, it emits chemical signals that prompt others nearby to produce more sugary nectar. This, in turn, attracts predatory mites, which eat the attackers.

If the atmosphere is clean, Blande found, the beans easily communicate with neighbours growing 70 centimeters away. But if ozone concentrations top 80parts per billion (ppb), their warning cries can't be heard more than 20 centimetres away.

This 80 ppb of ozone pollution seems to often be the

level above which problems start. That's bad news because in urban areas concentrations of ozone often exceed 100ppb, and sometimes even 200 ppb. It is less clear when nitrogen oxide levels become a breached. For example, hourly levels of nitrogen dioxide shouldn't exceed 200 micrograms per cubic metre more than 18 times in one year, yet in parts of London this happened in just the first few days of 2017.

Urban gardeners may notice the effects. "These pollutants definitely affect the smells from plants," says Blande. Nitrogen oxides can reduce the time for which some floral scents linger in the air from 18 hours to a mere 5 minutes. Scented flowers such as roses don't have the same strong aroma in cities that they have in rural locations, says Blande. You have to get really close to smell them, and even then you are unlikely to experience the full aroma because compounds such as the clove-like beta-caryophyllene are quickly destroyed by pollutants.

It's not just our noses and poetic natures that suffer when the scent of flowers is disrupted. "I don't think it would be too big a jump to suggest that air pollution could also be a factor in reducing the numbers of flying insects, " says Girling. Insect numbers have been falling globally, a situation that came to prominence in 2017 when it was revealed that insects in German nature reserves had declined by an alarming 75 per cent in just 27 years.

Miscommunication between flowers and insects could be particularly significant for pollinators such as bees. Although no one has yet measured the overall impact this has had on bee numbers, Girling has found that the common volatile myrcene is particularly easily damaged by diesel exhaust— and this can lead honeybees astray. His team found if they removed myrcene from flowery scents, only 37 per cent of bees still recognised them.

As the language of plants becomes increasingly garbled, the impact on thQ survival of pollinators and plants themselves threatens to destabilise whole ecosystems, with serious implications for the natural world and commercial crops. Efforts are under way to reduce pollutants such as diesel exhaust but progress is slow. The good news is that there is a simple and immediate step we can take to help plants communicate: grow more of them to mop up the pollutants. Some plants are better at this than others, but research suggests reforestation is a particularly good option because trees have a large surface area to absorb ozone and nitrogen dioxide from the atmosphere.

Urban planners are already moving in the right direction. Many cities now have vertical gardens and living walls. Near London's Victoria train station, for example, a 20-metrehigh wall contains more than 10, 000 plants. Even trees are being planted on the sides of buildings. In 2014, the first forest skyscraper went up in Milan, boasting 800 trees and almost 20,000 other plants. In China, the Nanjing Green Towers, currently under construction, will have 1100 trees along with thousands of other plants, and a whole forest city is planned in Liuzhou.

Such urban forests do, of course, have their communications undermined by pollution, but they also serve to reduce its impact on other plants. What's more, with more plants closer together they don't have to shout as loudly to be heard. It seems like a no-brainer. Nevertheless, Fuentes injects a note of caution. He points out that some plants produce lots of organic molecules that are precursors of ozone, so can make matters worse when mixed with dirty city air. "Oaks, poplar trees — those are no-nos," he says.

And what about rural areas? Although such places are often cleaner, pollutants can have a disproportionate effect here because of their impact on commercially important plants. The solution, says Fuentes, is to plant more flowers around crop fields — in particular, he recommends petunias. These won't just clean up the pollutants that disrupt plant communication, but will also attract pollinators. If the flowers smell sweet, that's even better for our human noses. It's a win, win, win solution.

NewScientist 17 February 2018

Divisional Diary 2017/8

Indoor Meetings: 7:15 for 7:30pm on the 3rd Wednesday of the month, October to March at Cliffe church hall, Lewes, unless otherwise stated. Members are invited to arrive early and assist in putting out chairs. Non-members are always welcome.

Summer Programme

Our summer programme of out apiary meetings will resume in the Spring of 2018

Winter Programme

Indoor meetings

~~Wed 17th Jan 2018: AGM followed by a quiz with Amanda and the B&L Annual Honey Show~~
~~Wed 21st Feb: Gardening for Pollinators with Amanda Millar (Late change to programme)~~
Wed 21st March: Skep Beekeeping with Chris Parks

For your diary

~~6th to 28th Oct - 86th National Honey Show, Sandown Park Racecourse, KT10 9AJ.~~
~~Sat 25th November - Sussex Beekeepers' Association Annual Convention, Uckfield Civic Centre.~~
~~Sat 24th February 2018 - WSBKA Annual Convention, Lodge Hill Centre, Watersfield, West Sussex.~~
Sat 3rd March 2018 - Sussex Beekeepers' Association Spring Meeting and AGM, Broad Oak Village Hall.
8th April & 29th April - B&L Tuition days in Hurstpierpoint aimed at new beekeepers (and others!)
Sat 19th May 2018 - Sussex Beekeeper Association Festival of Bees, Heathfield Community College.

The Brighton and Lewes Division of the SBKA cannot accept any responsibility for loss, injury or damage sustained by persons in consequence of their participation in activities arranged.

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Contributions to your newsletter
Contributions, including photos, to the newsletter (max 900 words) can be sent, preferably by email, to the editor see panel above for details
Photos etc. for the website should be emailed to our webmaster, see panel above.

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