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University of Sussex



Newsletter

I'm delighted to introduce the sixth issue of the [Buzz Club](#) newsletter. We hope to help answer important questions about the state of the UK's pollinators, whilst encouraging everyone to learn more about the insects in our gardens, how to encourage

them, and also to take an active part in scientific research. Our sixth quarterly newsletter contains articles about winter bumblebees, top tips for great garden plants for bees, and updates of current projects our members can join.

This issue is edited by Prof Dave Goulson.



dens across the country, and question whether sowing small wildflower meadows has any effect.

It was a relatively warm winter last year, followed by a very wet and cold spring, and I am sure all the gardeners amongst us remember the resulting attack of slugs and snails in our gardens! Some seeds therefore got eaten, and the flowering was off to a slow start due to the cold weather, but by July the majority of wildflower patches were blooming with cornflowers and poppies (photo to follow).

Participants returned their samples to us at the end of

Current Projects Update

Pollinator Abundance Network (P.A.N.)

Processing of the samples from the third year of our Pollinator Abundance Network (P.A.N.) project is well underway! This is a nationwide project which aims to monitor trends in populations of pollinators, so that we can see which species are declining and take steps to help them. Bees and wasps are currently being identified and other pollinators counted in our Sussex lab – sifting through lots of vinegar to count everything you've all caught. Its smelly work (I don't think I will ever put vinegar on my fish and chips again!), but after we have identified all the samples collected we will have 3 years of data! This is a great start, and we hope to publish our findings and show how effective this method can be

for estimating pollinator abundance across the UK. We'll keep you updated on our progress. We still want to keep the project going and plan to run this project again next spring. We will send out invites to members to sign up to the project early 2017.

Air Bee n' Bee Update

Earlier this year we trialled our Air Bee n' Bee project – asking members to put up and monitor homemade or manufactured bee hotels in their garden. Although only a few members undertook the project and 13 hotels were monitored, we have had some promising initial results. During six 5 minute surveys across April, May and June, in total members observed 25 bees coming in and out of their bee hotels. Furthermore, 73 of the tubes in these hotels were capped

off with either mud (likely to be by red mason bees) or cut leaves (leaf cutter bees). This further supports the notion that you can provide nesting opportunities for common bees in your garden, simply by adding a bee hotel. We hope to continue this project and undertake it again in the spring of 2017, so watch this space.

Sow Wild!

The Sow Wild! project is now entering its second year, with almost 50% of initial volunteers returning their samples and signing up for 2017 – a great turn-out!

Sow Wild! started in 2016, asking volunteers to sow wildflower seeds in their garden and collect pollinators throughout the summer months. This allows us to look at abundance and diversity of pollinators in our gar-



Sick bees can still find their way home

When bees leave their nests to collect pollen and nectar from flowers, they can often end up travelling a long distance away from the hive, up to 6 km in the case of honeybees. This means it is very important for them to learn exactly where their hive is before they leave to make sure they can find their way home again. To do this, bees perform special 'orientation flights' where they fly in a figure-of-eight above the nest, making increasingly larger loops and paying close attention to what objects are surrounding the nest, such as the position of trees or hedges, which helps them get their bearings. But what happens if the bees aren't feeling well? Just like us, bees can become infected with diseases which make them sick, and we all know what it's like when you're feeling under the weather, even completing the most simple of tasks can be difficult! Buzz Club scientist, Beth Nicholls, and a team of other scientists recently conducted an exciting study to investigate how diseases might affect honeybees' ability to navigate. They attached tiny 'aerials' to the bees backs which emitted a radio-signal and allowed the scientists to track their flight behaviour using radar- just



like the system used by planes and ships. They found that while bees infected with a disease didn't fly as far as healthy ones, the pattern of their orientation flights was not affected, suggesting that even sick bees would still be able to learn the location of their hive.

Perfect Pollinators Project

We have an exciting opportunity for **schools in Sussex** to host their own

solitary bee nest and help scientists collect important data on mason bee nesting behaviour. Perfect Pollinators is a collaboration between the University of Sussex and NatureQuest and will **provide primary schools with free solitary bee nest boxes**, specially designed to allow children to observe the whole life cycle of these fascinating insects. Mason bees are very docile and don't require any maintenance. After receiving some training from us, we'd like you to work as a class to pick the best spot to place your nest and then **help us collect data on their behaviour**, such as when the bees first arrive, and how many foraging trips and nests they make. Mason bees usually arrive and start nesting in early spring and are finished by June, but if you are lucky you may also get leaf-cutter bees that are on the wing later in the summer. We will then collect this data and compare how well bees do in rural and urban environments, and how common these fascinating insects are in different parts of the county.

To register your interest in taking part, or if you'd like to learn more about the project, please contact Beth Nicholls via email: e.nicholls@sussex.ac.uk or phone: 01273 873377



A honeybee fitted with an 'aerial' which emits a signal and allowed the researcher to track the bees' flight. Photo credit: Stephan Wolf.

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summer, and these are currently being processed and studied in our lab. So far, 100% of participants returned samples containing insects of interest to the project – including bees, hoverflies and solitary wasps. Many participants thought they didn't collect anything exciting, when in fact they collected parasitoid wasps which are so tiny they look like midges to the naked eye! Parasitoid wasps are a huge group of insects that take care of pests in our garden such as aphids, thereby reducing our need for insecticides.

In 2017 we are going to include a few more sampling methods so we can get a more representative sample of what's in our gardens, including a 10 minute 'bee watch'.

Kits should be sent out at the beginning of spring, along with individual feedback on 'what's pollinating my garden?'

Thanks again to everyone who contributed for their hard work!



Hot off the Press!

I'm sure that you are all aware of the value of pollinators in ensuring our crops produce fruits and seeds, but did you know that there wouldn't be berries on your holly and mistletoe Christmas decorations if it weren't for bees and flies pollinating the plants?

Just in time for Christmas, Professor Jeff Ollerton from Northampton University has published a paper in which he shows that holly with berries sells for twice as much as holly without, while mistletoe is three times more valuable with berries. In other words, the insects that pollinate these plants are performing an important economic service, helping boost the livelihoods of mar-

ket traders who deal in these plants (and, I suppose, helping to lighten the pockets of those of us that buy them—Bah Humbug!). But Christmas wouldn't be the same without those bright red holly berries, so a very Merry Christmas to our little pollinating friends!

The full article is here, you can find it online if you'd like to read more.

[Ollerton, J., Rouquette, J.R. & Breeze, T.D. \(2016\) Insect pollinators boost the market price of culturally important crops: holly, mistletoe and the spirit of Christmas. *Journal of Pollination Ecology* 19: 93-97](#)

Best garden flowers for pollinators: Sicilian honey garlic

By Prof Dave Goulson

There are many sources of information on the best garden flowers to grow for bees and other pollinators. Garden centres often helpfully label plants that attract bees and butterflies; many use the Royal Horticultural Society's "Perfect for Pollinators" label. The internet abounds with advice and lists, but it is my experience that these lists have problems. Some of the advice is poor. For example, Asters are often labelled as good for bees, but some varieties of aster are actually very poor. Much of the advice is based towards plants that are good for bumblebees and honeybees, but ignores plants that are good for hoverflies and solitary bees. For example many hoverflies are attracted

to umbellifers, such as wild carrot and lovage, but these are rarely mentioned in lists of plants one might grow for wildlife. I have been trying to compile a list of tried and tested plants suitable to attract and feed a broad range of different insect types. It is a work in progress, but is available here:

<http://www.sussex.ac.uk/lifesci/goulsonlab/resources/flowers>

The list is far from perfect, but over coming years I will be testing these and other plants to try to identify the very best varieties to grow. Last year I tried for the first time Sicilian honey garlic, *Allium siculum*. This is a member of the onion and lilly family that grows wild in southern Europe, but which seems to thrive in my garden on heavy clay in Sus-



sex. I bought bulbs last year and planted them in December, so now is a good time to get some in. The plant produces inconspicuous strap-like leaves in spring and then a tall, elegant flower, about 1 m high in June. It is not the most colourful of flowers, but the pendant, bell-shaped flowers are nonetheless rather beautiful and they literally drip nectar. It took a few days for my bumblebees to notice them, but once they

did they went berserk for them, particularly common carders and red-tailed bumblebees.

According to advice from Kew Gardens this species can self-seed and become a bit of a pest, but as far as I am concerned it is very welcome to in my garden.

If you have top tips for plants that attract pollinators in your garden, do let us know.

Pollinator Corner - winter bumblebees



It is December, a traditional time for mulled wine, carol singing and presents, not a time one might normally associate with bumblebee watching. But in between festivities do keep an eye on your garden, or take a walk in the local park to help digest those mince pies. Pay particular attention to the Mahonia bushes, and to winter-flowering clematis, and you might be rewarded by the cheerful sight of a winter bumblebee.

Bumblebees normally have an annual life cycle which ends in the summer with the young queens going into hibernation and

their nests dying off. At this time of year there should be no bumblebees to be seen. But in recent decades buff-tailed bumblebees (and very rarely one or two other species) seem to have decided to abandon their normal life cycle. What appear to be young queens can be seen on the wing collecting pollen in November and December, and workers are about right through the winter months. It mainly seems to occur in the south of the UK, but has been seen in Northern England. The phenomenon is mainly associated with cities, where there are more gardens (and hence more likely to be exotic winter-flowering shrubs), and also where it tends to be warmer, though last winter I had winter bumbles in my garden in rural Sussex.

So far as we can tell this is an example of a species adapting to the availability of winter flowers, a resource that until recently was unused by insects. Climate change is probably helping too. If you see a winter bumblebee, please try to take a photo and send it to us with the date and postcode: we will then be able to add the record to national databases which are helping us to map the spread of these hardy bumblebees.

Wildflower Mix



Check out our video [here](#) where Josh shows you how to use the wildflower seed mix in your member pack. It also has lovely shots of some foraging pollinators!

If you have any pictures or interesting experiences with insects or pollinators please feel free to send them to buzzclub.uk@gmail.com, or tweet to us @The_Buzz_Club and we will add them into our newsletters.

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We are a group of scientists and non-scientists, adults and children, working together to find out more about bees and other pollinators. The Buzz Club's goal is to ensure that we look after our wild bees and other insects, giving them a future. We can only do this if we understand more about them; why are some disappearing, how many are left, and where are they? How fast are they declining? What can we best do to help them? Together, we undertake fun nationwide surveys and experiments.

Visit our website

www.thebuzzclub.uk

Help us study and save pollinators!!