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The seventh issue of the [Buzz Club](#) newsletter has arrived. It is now Spring, and our main projects are starting. We hope to help answer important questions about insects and bees, whilst encouraging everyone to learn more about and take an active part in scientific research.

Our seventh quarterly newsletter contains news about how much food bumblebees need, Dave's new book, and updates on current projects our members can join. This issue is edited by Dr. Rob Fowler.

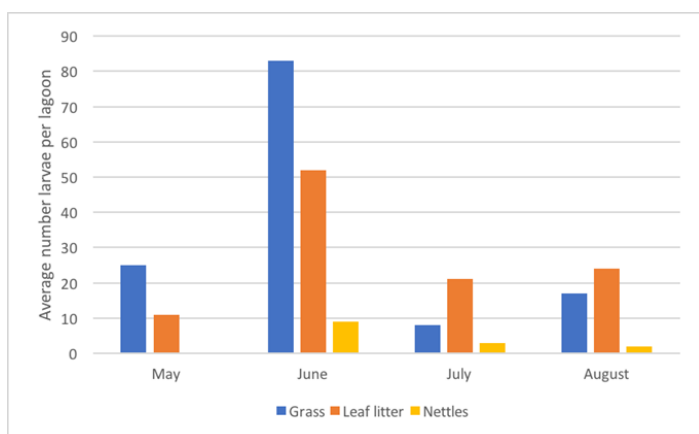


Current Projects Update

Hoverfly Lagoons

The Hoverfly Lagoons Project's inaugural year was 2016 and it had some interesting, exciting and surprising results. We had an impressive 122 volunteers sign up to the project, and of those that submitted data, 50% found larvae in their lagoons. Most volunteers chose grass, leaf litter or nettles as a substrate for their lagoons, and the former two were remarkably productive.

In May, up to 85 larvae were found in grass lagoons, and 19 in leaf litter. June was the peak month with an average of 126, and maximum 745 larvae in one garden! Grass and leaf litter lagoons were the most productive with an average of 83 and 52 larvae respectively (see graph below). In July, leaf litter lagoons were the most productive with an average of 21 per lagoon, and maximum 100 larvae. Overall, the greatest number of larvae



was recorded in a grass lagoon (259) and a vegetable waste lagoon (285), the latter was filled with leftover cabbage, lettuce and mushroom, which was an additional lagoon devised by one volunteer. The greatest number found in a leaf litter lagoon was 155 and in nettles was 17. Many of the pupae collected from lagoons were subsequently found home to parasitic wasps. To cut down on parasitisation, this year we will recommend searching pupation sites on a more regular basis where possible,

especially once larvae have been observed as large and white opaque, and making the trays several inches deep with leaf litter and soil to allow larvae to find more cover to pupate. These results are really promising but we need more data. We hope they will stand to inspire more people to join the project this year as we spread the word about how effective a simple pot of wet leaf litter is for boosting a beautiful group of pollinators. Bring on Hoverfly Lagoons 2017!

New Book from Dave

Bee Quest

A hunt for the world's most elusive bees leads Dave Goulson from Salisbury plain to Sussex hedgerows, from Poland to Patagonia. Whether he is tracking great yellow bumblebees in the Hebrides or chasing orchid bees through the Ecuadorian jungle, Dave Goulson's wit, humour and deep love of nature make him the ideal travelling companion.

But perhaps *Bee Quest* is most fascinating when Dave Goulson explores closer to home, amongst the secret places hidden right under our noses: the abandoned industrial estates where great crested newts roam; or the re-wilded estate at Knepp Castle, where, with the aid of some hairy, bluebell-eating Tamworth pigs, nightingale song has been heard for the first time in generations.

This utterly charming book will inspire you to think about the ways in which we are all responsible for the future of our world. Through his scientific expertise and passion for conservation, Goulson shows us nature's resilience against the odds, and that beauty hides in the most surprising places.

Reviews:

"You'll learn all sorts of interesting things without effort because he's a natural storyteller with a particular gift of understatement that is often laugh-out-loud funny – which you don't expect from a bee book... It's warmly personal, and stuffed full of the inescapable poetry and beauty of the natural world... Going on *Bee Quest* with him puts the natural world within our reach – to enjoy but also to protect... This is a truly positive and empowering read – you closed it better informed, filled with poetry, pies and ready to get out there and make a difference." (Laline Paull *Observer*)

"This is a quest that takes us from Patagonia to Poland, from Ecuador to Essex, fueled by Dave Goulson's extraordinary passion for the bumblebee... Goulson's search for some of the world's rarest bees has led him on a geographical and intellectual exploration that combines bizarre facts about bumblebees...with passionate ideas about conservation." (Martha Kearney *The Times*)

"Every now and then you come across a book that changes the way you look at the world. This is one of those books. Ostensibly about bumblebees and Goulson's quest to find some of the most endangered ones around

the globe, it proves to be much more than that... *Bee Quest* is as much a travel guide as a bee compendium... Along the way he conjures up the history, atmosphere and landscape of his surroundings with an infectious enthusiasm and descriptive flair that more than makes up for the lack of illustrations... You may well find yourself building a bee hotel and ordering wild flower seeds long before you reach the end of the book." (Patricia Carswell *WI Life*)



New Buzz Club Website

If you've visited the Buzz Club's website recently, you'll have seen that it has had a much needed revamp! We have tried to make it more user friendly, and easy to navigate. All the same content is there, as well as some updates and information about all our projects and how you can join in with the ones you want. We also have our news feed which we will keep updated on the latest from the Buzz Club. If you think we could improve our website, please feel free to send specific suggestions to info@thebuzzclub.uk.



Hot off the Press! How Much food do bumblebees need?

With our semi-natural habitats disappearing, wildflower food resources are becoming scarce which is one of the major causes of current pollinator declines. We know very little about how much pollen and nectar insects need to grow, survive and reproduce, so we investigated this in the buff-tailed bumblebee, *Bombus terrestris*. We found that a queen bumblebee requires up to 6 g pollen and 50 g sugar just to rear 5 workers, and that a colony feeding ad-lib producing up to 210 workers and 329 males can consume up to 176 g pollen and 1,186 g sugar in its lifetime. Translated into what that means in

terms of what a common forage plant such as bramble, *Rubus fruticosus*, produces in 24 hours, a colony might need as many as 737,914 flowers worth of nectar! It's likely that wild bumblebee colonies would not naturally have access to ad-lib pollen and nectar throughout their life time so we were interested to know how a colony would cope when food resources were restricted. We found that colonies produce smaller and fewer workers and males, which would likely impact on their success. Our findings also suggested that smaller colonies were more vulnerable to a drop in available pollen and nectar,

which highlights the importance of ensuring that ample spring forage is available when colonies are getting established. The next step in our research is to compare the quantities that

bumblebees consume in the lab with what is available in the countryside, and identify areas and times in the season where there is likely to be a pollen and nectar deficit.



By Dr Beth Nicholls

Do you have an allotment? Buzz Club scientists are looking for allotment holders in Brighton & Hove to join Team Pollinate and help collect important data on which insects are pollinating the food grown in urban areas. Collecting data for the project is very straightforward. Every fortnight you will be asked to count the number of bees, hoverflies and butterflies visiting any crops that are flowering in your plot. We'd also like you to keep a record of how much food you harvest throughout the growing season, as well as a diary of any pesticides you may use. If you'd like to learn more about the project, please visit our website www.teampollinate.co.uk



Pollinator Corner - Red Mason Bee

Red Mason Bees are already out in my garden. The males are flying around, sipping nectar from the apple blossoms and basking in the sun whilst waiting for the females to emerge.

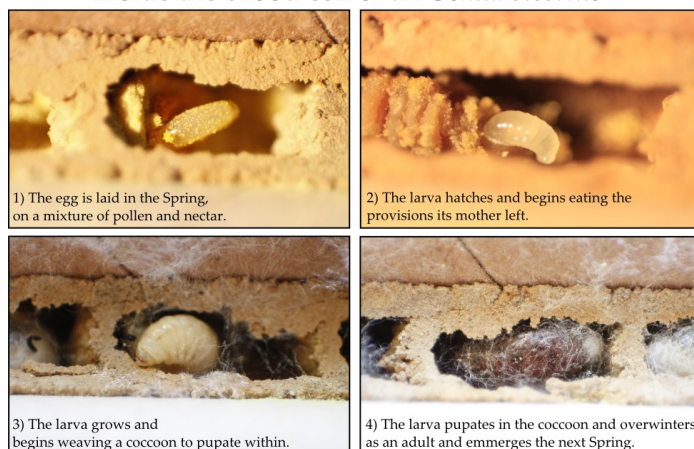
Mason bees nest in many places. Naturally nesting in crevices, soil or dead wood, they can also utilise the holes found in crumbling brickwork and mortar. This is what gives this bee their name, and can give them a bad reputation as some people think they cause problems in brickwork. Nowadays there are a range of 'bee hotels' you can buy that Mason Bees prefer to nest in, usually with long tubes of cardboard or holes in wood.

Red Mason bees have fascinating life cycles. They

emerge in Spring, collect pollen and nectar into balls and lay eggs on these pollen masses. They protect their eggs with mud, which they collect and move using their 'horns'. The larvae eat the pollen mass over Summer and eventually weave a cocoon and pupate before overwintering as an adult. These dormant adults can survive minus temperatures, emerging when the weather turns warmer in the Spring.

They feed on a range of plants when active in the Spring, and collect pollen from Apples, Cherries, Plums along with almost anything flowering, even Oaks, Limes and Sycamores!

Inside the brood cell of an *Osmia bicornis*



@Rob_Fowler



Upcoming events



Weald and Downland Museum —24th June

We are at the Weald and Downland Museum for this weekend as part of the Historic Gardens Weekend.

Wild About Mid-Sussex—June 3rd 2017

We are back again this year in the St. Johns Park in Burgess Hill, Sussex. Perfect for families!

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JMS Building
Falmer
Sussex
BN1 9RH

Email: info@thebuzzclub.uk



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!!