



## CHAPTER 1

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# Spring on the Wing

Spring has sprung, and the world outside abounds with the sights, sounds, and happenings that herald its arrival. Bulbs are bursting into flower, hawthorn buds are tentatively coming into leaf, and tadpoles have already hatched out in the bucket that masquerades as a pond on our allotment. I haven't heard chiffchaffs yet, but our resident blackbird is singing his heart out from his favourite perch three-quarters of the way up the walnut tree.

The sun feels deliciously warm on my back as I potter around inside the greenhouse. I peel off some layers and start rummaging through the packets of bee-friendly seeds that came through the post earlier in the week. There are agastaches, salvias, and veronicas; also, mixed cosmos and wild mignonette. I think I might start by sowing the wild mignonette into plugs. There are older packets of cornflowers and sunflowers, too, that we didn't get around to sowing last autumn. They should still be viable, so I may as well sow them and see what happens.

Rob and I have a fairly good-sized allotment, but it is already bursting at the seams. Now is probably the right time to reclaim the area between the compost heap and the hedge, to make it ready for planting out whatever

I start off in the greenhouse today – unless, that is, Rob has it earmarked already for vegetables. I might as well get these packets of seeds sown, and if we run out of room, we can always sell the surplus on the plant stall we keep outside our house.

Before I go any further, however, I need to create some space under my feet. Rob is well ahead of me, so I am having to pick my way over his tubs and troughs full of spinach and winter salads. Our greenhouse is small and struggles to accommodate everything we ask of it.

Whilst I am shifting things around and mulling things over, Rob is outside planting our first and second ‘earlies’. It is 17 March, St Patrick’s Day; it is considered good luck to plant your potatoes today. We are trying some new varieties this year – Lady Christl and Apache – alongside old favourites such as Belle de Fontenay and Red Duke of York. We never bother with main crop potatoes, as we can buy these and most other roots from Liz at the Thursday market. But we love growing earlies and salad varieties, planting five of each in stacks of old tyres dotted around our plot on the allotment.

Ours is one of the plots at the very top of the allotment site, backed by a row of terraced cottages, most of them thatched, whose gardens run down to meet the allotment’s boundary hedges. Each garden has a gate leading onto the allotment. Lucky them! We have come to know all the people who live in the cottages. There is a strong sense of the community in this part of our town.

Standing with the cottages behind us, our plot looks over the Blackmore Vale and down towards Melbury Beacon. There is a heavy mist hanging in the valley this morning, so I cannot see much farther than the farm below French Mill Lane, but the view is still spectacular. It is always so peaceful here; I especially love it at this time of year and feel blessed that we have been able to rent this plot from our local council. I wish everyone who wanted it, could have access to some land where they could grow and harvest food, or just sit and be. For some of our time in Shaftesbury, Rob and I lived in my mother’s flat, which didn’t have a garden. During those years, my mother’s health began to deteriorate, and I struggled enormously to come to terms with the fact that she might soon no longer be with us. Being able to come and work, sit, or hide on our allotment was a godsend.

I am still deep in thought when I notice Rob waving his hands in the air to attract my attention. He is pointing at something on the ground. I poke

my head out of the greenhouse. 'Bumblebee!' he calls. In my hurry to get there before she flies away, I trip over his spinach.

Nothing thrills me more than catching sight of my first spring bumblebee, recently emerged from her long winter sleep and preparing to establish a new colony of her own. Although one or two species have recently begun to raise broods during the winter months, most of the twenty-four bumblebee species found in Britain and Ireland have been hibernating deep beneath the soil since last autumn. I sorely miss their company whilst they sleep. It is such a treat to see and hear them again.

With bumblebees, it is only the fertilised queens that survive the winter. Apart from the odd colony active over the winter, all last year's males and female workers, together with the colonies' founding queens, will have died out long before the cold weather set in. So if you see an enormous bumblebee on the wing in early, mid, or late spring, she is highly likely to be a queen produced towards the end of last year's nesting cycle.

Having left her natal nest in autumn and mated with a male of the same species, a queen bumblebee spends the next few weeks of her life stocking up on nectar to help her build up her fat stores for hibernation. She then digs a tunnel into the soil, often beneath the roots of trees, or a north-facing bank, where she settles down for her long winter slumber. A hibernating queen can spend anywhere from six to nine months beneath the ground and can survive surprisingly low temperatures. Hard frosts and heavy snowfall pose no threat for her. If the temperature falls below a certain point, her body produces glycerol, a kind of antifreeze, which prevents her from freezing.

The first bumblebees to emerge from hibernation in Britain and Ireland are usually Buff-tailed bumblebees (*Bombus terrestris*), followed closely by the much smaller Early bumblebees (*B. pratorum*), then Tree bumblebees (*B. hypnorum*) and White-tailed bumblebees (*B. lucorum*). Others emerge, species by species, as their preferred food sources come into flower; some, like Great Yellow bumblebees (*B. distinguendus*) emerge as late as May or June, having spent the vast majority of their lives underground.

The bumblebee that Rob has spotted on our allotment is a beautiful Buff-tailed queen. She is sunning herself on the leaves of a dwarf comfrey that grows against the side of our compost bin, and she is *huge*. I always forget, until I see them again in spring, exactly how huge a queen bumblebee can be. Some species are naturally larger, but other factors come into

play, too, for instance, how good a summer it was last year, or how well the queen was provided for by the colony's workers during her larval stage. I suspect this particular bee was extremely well provided for.

If she has only recently emerged from hibernation, our bumblebee will be peckish, to say the least. I look around to see what is in flower on our allotment. We have a large patch of lungwort, but unfortunately, it is of no use to our hungry queen. Buff-tailed bumblebee tongues are too short to reach the nectar hidden deep inside this particular flower. What else? The last of our hellebores are blooming, and there is a mahonia still flowering in one of the tubs. These are both good sources of pollen and nectar for Buff-tailed bumblebees, but I am acutely aware there is very little else in the way of early spring forage here, and there are certainly nowhere near enough plants in flower to provide fully for the needs of our queen. Rob and I really need to rectify this before next spring.

Looking up towards the cottage gardens, I can see hellebores growing in the garden nearest to us. There are also grape hyacinths and daffodils, but only in small patches. Our queen's best bet would be to fly up towards the town, where she would find the vast swathes of bright yellow celandine flowering on the slopes in St James's Park; better still, in the semi-wild area just beneath Park Walk, there are goat willows.

Willow catkins are magnets for bumblebees, honeybees, and other early pollinators, as they offer copious quantities of protein-rich pollen and carbohydrate-rich nectar at a time when very little else is in flower. Bees and other insects are essential to the pollination of willows. Only after the bees have pollinated the willow flowers will the seeds, like other catkin seeds, be caught by the wind and dispersed. (Interestingly, all the other catkin-producing trees in Britain and Ireland, including hazel, poplar, alder, and silver birch, are pollinated by the wind, rather than by insects.)

As if reading my mind, our beautiful bumblebee clumsily begins to take flight. After a bit of circling and lot of looping above our allotment, she heads off in the direction of St James's Park. I rather hope that her circling and looping were a sign that she was orienting herself, and she is planning to return here later. I would love for her to set up her home on our allotment, although, in truth, I feel she would be better off choosing a spot closer to the willows.

Ever hopeful that one of these house-hunting beauties might someday establish a nest in our garden, Rob and I have created a kingdom – albeit

a Lilliputian kingdom – fit for a queen. We have been fairly limited in our efforts, because the property is rented and has but a tiny patio area, but our landlord has given us permission to pull up some of the flagstones and replace them with flowering plants, small shrubs, and a pond.

It is amazing what you can do with a small space, a few seeds and cuttings, and a little creative thinking. It doesn't take long to fashion a wildlife garden from scratch, and you certainly don't need to take out a mortgage to achieve it. If there are pre-existing wild or neglected areas on your plot, no matter how small or seemingly insignificant, all the better. Areas like these, even if they have not been long established, are already providing habitat capable of sustaining numerous invertebrates, garden birds, and other wildlife. All we need to do is nurture them.

We have such an area in the far left-hand corner of our patio garden, where an old Victorian privy has somehow survived. Its red-brick walls are covered in ivy that, when it flowers in the autumn, provides an abundance of nectar and pollen for numerous pollinating insects, as well as amazing nesting for garden birds such as wrens. The privy still has its original door, which doesn't quite shut any more, but it is dry enough inside, despite the tiled roof being in poor repair, for us to store the wood we burn in our stove through the winter. In addition to the inherited supply of well-seasoned wood left behind by the previous tenant, the privy is home to a variety of spiders and other creatures which greatly appreciate the shelter it affords. Robins nest there. Rats, too, I suspect.

Beside the privy grows a walnut tree. I call it the blackbird's tree. The idea of a walnut tree growing in a small patio garden must conjure up images of a grand old tree with a canopy so magnificent that, in the summer months, only dappled light might reach the patio beneath. Not so with the blackbird's tree. It is long and leggy and only just manages to hold its own between a twisted elder (pruned to within an inch of its life) and an extremely robust hawthorn. The three compete for what little light they can in an area dominated by our next-door neighbour's mature sycamores and, on the other side, by Sue's holly.

Sue is one of our neighbours, and we have to walk through her little plot to get to our patio. Very few of the gardens belonging to the terraced cottages we live in are attached to their respective cottages. Together with a row of Victorian privies, the gardens are all 'out the back', arranged

higgledy-piggledy on each side of a narrow pathway, hidden from passers-by. These are secret gardens, where time stands still.

Sue's plot, my favourite, is home to an ancient, dilapidated tin shed that Rob covets above all other sheds. Its door, if ever it had one, is long gone, and it provides open and welcome refuge for all manner of creatures, great and small, putting the privies to shame. In high summer, the shed is almost completely obscured by honeysuckle, ivy, and wild clematis, which sprawl across the roof and climb through the holly tree that props the shed up. In fact, Sue's holly is probably the only thing that keeps the shed standing. The side of the shed still visible is flanked by foxgloves, evening primrose, and enchanter's nightshade. I have seen Silver Y moths nectaring on the evening primrose, and bumblebees find the foxgloves irresistible. Next to the doorway of the shed squat the remains of an old tree trunk, partly hollow and almost rotted down, a perfect microclimate for its jungle of mosses and liverworts. Ferns and fungi also grow here, in the narrow alleyway between the shed and the fence of our patio garden.

Sue uses the shed mostly to store logs, and she occasionally grows runner beans and courgettes against its south-facing side, but mostly she leaves it alone to do its own thing. This is the kind of wild shed that dreams and paintings are made on. And poems, too. Thank goodness she has no wish to tame it.

I wish more people were like Sue. I wish we weren't plagued by a seemingly insatiable and completely irrational desire to control, tidy, manage, and order everything around us. I know, at the end of the day, that Sue's shed is just a shed, a small tin structure sitting on a piece of slightly overgrown ground on the outskirts of a town in South West England. The fact that she leaves it 'be' is not going to save a species on the brink from extinction, nor will it stop the world from overheating.

But to me, Sue's shed and the little patch of ground it sits on are a celebration of humans living in harmony with nature, allowing our wild hearts to connect with wildlife, of our daring to leave something *alone*. 'Left-alone' places, whether they be old tin sheds, log piles, hedgerows, fields, or entire landscapes, are safe places for wildlife. Wherever there is minimal or zero intervention and management; where nature has the freedom to do what nature chooses, rather than what we think nature should do; when we stop the clock, take a back seat, and become observers rather than masters; there, unexpected and magical things begin to happen.

My dearest wish is that Rob and I might one day be custodians of a small piece of land with a few trees, hedgerows, a meadow, and living water. It would be big enough for us to build a low-impact home so we could live there, and to grow food to eat and flowering plants to sell, but much of it we would just allow to go wild. This is our dream. In the meantime, I am just happy to have trees growing in, and adjacent to, our garden. Without them, there would be nowhere to hang our bird feeders and bee nesting boxes, and no cover for visiting or resident birds. I cannot imagine watching insects without there also being birdsong. The two go together, the birds and the bees.

When we moved into the cottage, it was immediately obvious that the spot in the corner of our patio, underneath the blackbird's walnut and the other trees, had been something of a dumping ground. It was piled high with broken terracotta tiles and pots and lengths of thorny bramble cut back by the previous tenant before he moved out. Black bags full of what I hoped might be rotted-down leaf mould turned out to be wet sand left over from when a new paving stone had recently been laid. An old tin bucket was filled to the brim with sludge. We left most of the broken terracotta and some of the brambles, as both were already providing good habitat for various creatures, but we cleared the rest.

This revealed the remains of a little wall, no more than forty centimetres or so high, made from Shaftesbury greenstone. There were more lumps of greenstone and plenty of broken bricks lying around, so we extended the little wall along the left-hand edge of the patio, towards the corner where we planned to dig our pond, gradually reducing the wall's height until it was only one brick high.

We ended up with just enough space between this edging and the hedge that marks the boundary between our garden and the one next door to put in some shade-loving plants for pollinators. We chose lungwort, geranium, dwarf comfrey, and hellebores, allowing each to spill out over the little wall onto the paving stones, then added foxgloves and columbine, for height, at the back. Rob dug out and lined a basin for the pond, and after it had filled with rainwater, we tackled the area behind it. This corner of the garden is slightly less shady, so we filled it with wild bergamot, yellow loosestrife, nepeta, and more foxgloves. We planted a pot of marsh marigold in the

middle of the pond and, to soften the edge where it meets the patio, lots of bugle. If I were a bumblebee, I'd make my nest here.

After her long winter sleep, a newly emerged queen bumblebee, like the one Rob found on our allotment this morning, needs to forage for nectar to build up her strength and for pollen to develop her ovaries. Hopefully, if she is a species that comes out in the early spring, like our Buff-tailed bumblebee, she will have chosen a hibernation site close to an area with a plentiful supply of winter-flowering heathers, gorse, crocus, or pussy willow; or with other early spring favourites such as snowdrops, white dead-nettle, and green alkanet.

However, if the sun tricks her into emerging too early, and she can find nothing to feed upon, she will starve. It used to be that growing nectar- and pollen-rich plants that flowered from March through to October was sufficient to support our bees, but this is no longer the case. With changes in climate causing confusion about the right time to emerge for plants and insects alike, it is more important than ever to plant flowers, shrubs, and trees that will bloom in succession, all year round, including through the winter, in our gardens, parks, and other open spaces.

Once she has replenished herself with nectar and pollen, a queen bumblebee's behaviour changes. She begins to fly in a zigzag pattern, just above the ground, showing a particular interest where there are piles of dead leaves and rotten wood, as she prospects for a suitable site to build her nest. A bumblebee's preferred choice for a nest would be a vacated mouse or vole nest, but with the demise of hedgerows and woodland edges, these are becoming harder to find.

Other preferences (depending on the species) include tussocky grass, compost heaps, crevices beneath stone walls, bird boxes, or the eaves of houses. Those that are fortunate enough to find a suitable nest must be prepared to defend it from other bumblebees, as competition for nesting sites is great. I do not know for certain, but I imagine that one of the factors contributing to the success of Buff-tailed bumblebees and other early-emerging bees – whilst many other species are in decline – is that they steal a few weeks on other bees in the 'nest hunting' race, establishing their colonies well before later-emerging species can get a look in.

However, the main reason Buff-tailed bumblebees and other early-emerging species have been so successful is that they are not fussy when it

comes to foraging and habitat preferences. Seven other species of bumblebees are similarly flexible: the Early bumblebee, White-tailed bumblebee, Tree bumblebee, Red-tailed bumblebee (*B. lapidarius*), Common Carder bumblebee (*B. pascuorum*), Heath bumblebee (*B. jonellus*), and Garden bumblebee (*B. hortorum*). As these ‘big eight’ don’t have to rely on only a few types of flowering plant or niche habitats for survival, they do very well in urban landscapes like parks and gardens.

Having found her supply of pollen- and nectar-rich flowers and stumbled upon a vacant rodent’s nest or some other suitable abode, our new queen is now ready to establish her own colony. Depending on the species of bumblebee, she might reach this important stage anytime between March and July, though an early spring can trick some bumblebees into starting earlier.

Before she begins to lay her eggs, she needs to remove any unwanted debris from inside her chosen home, and to waterproof her surroundings to the best of her ability. This task completed, her behaviour changes significantly again. Instead of zigzagging and meandering close to the ground, she begins to fly back and forth, to and from her nest, with great purpose, collecting pollen and nectar. On her return trips, the pollen baskets, or *corbiculae*, on her hind legs are absolutely laden with pollen, looking to all intents and purposes like saddlebags. On top of the nectar she carries in her honey crop, a bumblebee can carry over 50 percent of her body weight in pollen.

Whenever you spy a queen bumblebee carrying large pollen loads, you can be pretty sure she has established, or is in the process of establishing, a nest. Inside the nest, she secretes slithers of grey-white wax from glands in her abdomen and uses these to fashion a little pot, about the size of a child’s fingernail and shaped like Winnie-the-Pooh’s honey jar. This she fills with her foraged nectar. Should she need to remain inside the nest for long periods of time due to inclement weather, the queen will use the nectar in this honeypot to feed herself and keep up her energy levels.

Once these housekeeping chores and preparation have been completed, the queen is ready to lay her first batch of eggs. She mixes together some of the pollen and nectar she has collected, with saliva, kneading the mixture into a little lump into which she lays between eight and sixteen eggs. From now until the day her first brood of workers emerge and are ready to fly, the queen bumblebee’s time will be divided between ‘brooding’ and nipping out to forage.

Bumblebees 'brood' in much the same way as birds do. For the bumblebee eggs to hatch successfully, the queen needs to sit on them and keep the temperature at around 30 degrees Celsius. She does this by disconnecting the flight muscles inside her thorax and shivering her muscles until her body reaches the required temperature. (This is also how bumblebees are able to heat themselves up in very cold weather, enabling them to fly when other bee species are unable, but they can do so only if they have consumed enough nectar to provide the energy necessary to vibrate their flight muscles.) Unlike most brooding birds, a queen bumblebee, when she first establishes her nest, is a single parent. She has no support, yet she still needs to make occasional trips to forage. Her foraging trips become short and sharp, to ensure the temperature of her eggs doesn't drop too low in her absence.

Once she has laid eggs, the queen faces the entrance of her nest, ready to ward off any unwelcome intruders. Her little nectar pot will be positioned close enough so that she can easily dip her tongue into it and sup nectar. This will keep up her energy whilst she is brooding.

Around four days after the queen lays her eggs, they hatch. For the next two weeks the developing larvae feed upon the pollen she has provided for them. As they feed, the larvae go through various growth stages, before spinning individual silken cocoons around themselves, inside which they will pupate. During pupation, some kind of cellular alchemy takes place – in much the same way as it does when caterpillars turn into butterflies – and two weeks later the bees emerge from their cocoons as beautiful, fully grown adults.

The first few broods in a bumblebee nest are always female worker bees. The workers are usually much smaller than their queen and will take on the roles of nursemaids, cleaners, guards, and foragers. After her colony is properly established, the queen rarely leaves the nest again. She now has workers to collect the pollen and nectar to feed subsequent broods, and her role turns exclusively to laying more batches of eggs.

Time ticks on, and as spring becomes summer the nest continues to expand and grow. The queen keeps on laying, whilst the workers, depending on their size, adopt distinct roles within the colony. Larger workers, being capable of carrying more pollen and nectar back to the nest than their smaller sisters, usually take on the role of foragers, whilst smaller

workers stay at home cleaning the nest, tending to the queen, and feeding the larvae. At the height of summer, if conditions are right and there has been a plentiful supply of pollen and nectar, the number of worker bees in a Buff-tailed bumblebee colony might exceed four hundred individuals. In other species, for instance, Early and Garden bumblebees, a nest will support significantly fewer workers, peaking at about a hundred.

If the nest is successful and the queen remains healthy, she will now be poised for the next, and most important, step in the nest's life cycle: the production of males and new queens. Up until this moment, the queen has laid only fertilised eggs, releasing a minute amount of sperm, stored inside her body since she mated the previous autumn, each time she lays an egg. These fertilised eggs contain her chromosomes and those of the male she mated with, and they all develop into female bees.

When the time is right, she switches from laying fertilised eggs to laying unfertilised eggs – that is, eggs that contain only her chromosomes – and these unfertilised eggs develop into male bumblebees. And as she starts to lay male eggs, the queen simultaneously switches off a pheromone she has been producing that has instructed her workers to raise eggs as worker bees. The switching-off of this pheromone, and the laying of unfertilised male eggs, is the beginning of the end of the colony's life cycle. Her final batch of fertilised eggs will develop into new queens.

After they have emerged from their cocoons and are ready to fly, the male bumblebees leave the nest, never to return. The new daughter queens follow soon afterwards. Interestingly, after she has switched off the pheromone that instructs workers to raise the eggs as worker bees, the queen loses her dominance over the workers, and some of them begin to lay unfertilised eggs of their own. The old queen, tired and weak, loses her grip on the colony, and chaos breaks out.

Whether or not the workers start laying eggs of their own, once the males and daughter queens have left, the colony is on borrowed time. Over the next few weeks, its inhabitants die off, and nature's detritivores – earthworms, dung beetles, millipedes, and the like – move in and clean up the abandoned nest. The new queens mate and go into hibernation; the males are dead before winter sets in. The entire future of the species now depends upon the newly mated queens surviving hibernation and successfully establishing their own nests the following spring.

The average life span of a nest is around eighteen weeks, but Early bumblebees complete theirs within twelve to fourteen weeks, meaning they are able to establish two, sometimes three, colonies in a year. Amongst this species, the new queens, if they emerge by early autumn, immediately start new nests, instead of going into hibernation. Common Carder bumblebees, in contrast, are very slow to establish their nests, and their colonies are still active well into the autumn, when most other bumblebees have completely finished their life cycles. If you see a bumblebee still collecting pollen in September, it is likely to be a Common Carder.

By chance, this spring, a Buff-tailed bumblebee chooses the newly created wildlife kingdom in our garden to establish her colony. I discover the nest on 20 April in the little Shaftesbury greenstone wall at the far end of our patio garden. How did I not notice them earlier? I must have walked past the nest's entrance at least a dozen times to fetch logs and hang out washing. No matter, I have found them now, and I am looking forward immensely to watching their comings and goings over the next few months. The fact that a queen bumblebee has chosen *our* greenstone wall over all the other greenstone walls in town (and Shaftesbury, let me tell you, is *full* of such walls) fills me with joy. It is the kind of joy you experience when a pair of blue tits nest in one of your bird boxes, or when you find tadpoles in a pond that you not long ago created.

I ring Rob, who has already this year found two nests in Diana's garden, to share the news, then celebrate with my first nettle tea of the year. Nothing tastes fresher or greener than tea made from young leaves gathered whilst the kettle is still boiling. Tea bags are fine, but they simply do not compare with tea made from leaves or flowers you have picked and infused yourself. I used to get stung when gathering the leaves, but that happens less frequently now that I have learned to be bold and 'grasp the nettle' firmly between my finger and thumb before plucking it away from the plant. I make the tea in my favourite mug – tall, thin, perfect for keeping my drink hot when I get distracted and forget to drink it – and take it back out to the garden with the last slice of the wondrously fragrant (and seriously delicious) lemon polenta cake Rob made for my birthday. I brush the dust and cobwebs off the garden chair that hangs from a nail in the old privy, and station myself right opposite the nest entrance, close enough that I can watch the bees come and go, but far enough away so as not to disrupt the flight path of the workers.

Almost as soon as I am seated, a bumblebee flies out of a gap between two of the stones. She doesn't pause to orient herself, so she must already have been back and forth a few times and already knows exactly where the nest is. Had she been new to the job of foraging, she would have gradually flown upwards, in ever-increasing circles and figures of eight, taking in the landmarks, near and far, that would help her find her way home. Bumblebees tend to forage within five kilometres of their nests, though distances as large as twenty kilometres have been recorded. It never ceases to amaze me that bumblebees are able to fly these distances yet still manage to find their way back home.

This particular bee is extremely small, even for a worker. Her diminutive size tells me she is probably from the colony's first brood of workers, and that the pollen the queen provided for this first brood might have been lacking in quality, quantity, or both. It is the pollen collected by bees that provides the protein needed for the larvae to develop and grow. Without a good source of protein, bees, just like any other animal, including humans, are likely to be stunted in size compared with those fed lots of good protein. Later broods in the nest's life cycle, which are provided for by multiple workers rather than the queen alone, tend to be larger – providing, of course, that good sources of pollen and nectar are available.

I monitor the activity at our bumblebee nest over the next month or so, but the first few weeks of June prove to be really busy, and I haven't caught up on it recently. The colony should be well established by mid June, but Rob tells me he thinks it is less busy than it was at the end of April; he hasn't noticed any bees going in or out for about a week. This strikes me as odd. The weather has been good, and there is certainly no shortage of suitable forage in the vicinity.

I am working to a deadline, but I cannot concentrate after hearing Rob's report on the nest, so I nip out to check on it. I can see from the steps into the garden that something is wrong, and I am horrified when I get closer and find the entrance has been completely blocked by some kind of rubbery web. I am further dismayed when I notice a number of large, maggoty-looking grubs moving around inside the rubbery stuff. I clear the grubs and the substance they are encased in away from the nest entrance with a twig and examine them. Although I have never seen any before, I am pretty sure these are wax moth larvae. I know they can pose a threat to honeybee hives,

but I am not sure if they bother bumblebee nests, too. I wait for a while to see if there is any bee activity in the nest. Nothing. I put my ear to the ground to listen, in the hope that I might hear buzzing or humming, but the earth beneath the stone wall is silent. I fear the worst.

A few days later, my fears are borne out. No bees. The nest has failed. I am gutted – and absolutely furious with the wax moth, for laying her eggs inside my bumblebee’s nest. But who am I to choose the success of one species over another? The wax moth was simply doing what wax moths do, providing the best start in life for her offspring.

I wonder, had her offspring looked less like giant maggots, whether I might have felt more kindly towards them. My curiosity piqued, I look to see what else I can find out about them and discover we have two species of wax moth, plus a Bee moth, in Britain and Ireland. Unfortunately for bumblebees, the Bee moth (*Aphomia sociella*), lays her eggs in bumblebee nests, usually sneaking in after dark to avoid detection by the queen. Once the eggs have hatched, the larvae feed on the wax secretions which the queen has used to construct her nest. Worse still, the moth larvae will also feed on the bee larvae.

I am not sure if the moth who laid her eggs in the entrance of our bumblebee’s nest also laid eggs in the heart of the colony. It doesn’t matter. By laying them just inside the entrance, and surrounding them in a web of protective, rubbery fibres, the moth blocked the resident bees from leaving, or gaining access to, their own nest. Within days, the nest would have been a tomb, the entire colony starved to death.

The Bee moth is just one of many predators, parasites, diseases, and other challenges that bumblebees have to contend with, which makes it all the more important that we do everything we possibly can to help them succeed. Fortunately for our fuzzy friends, they have their very own charity, a wonderful organisation called the Bumblebee Conservation Trust, or BBCT, set up in 2006 by Professor Dave Goulson and Dr Ben Darvill.

Back in 2006, Dave Goulson was based at the University of Stirling, where he had been studying bumblebees and the causes of their decline for over a decade. He and his research group had had numerous scientific papers published on bumblebees, but every one, says Dave, was ‘read by a handful of other academics and then swiftly forgotten.’ They had a pretty good idea why bumblebees were in trouble, but no one was doing much to help. It was extremely frustrating. Then Dave hit upon the idea of forming

a membership-based charity 'devoted to providing sound advice by taking the best scientific research and turning it into real-world action.' And so the BBCT was born.

From its conception, the BBCT has aimed to inspire people to create flower-rich habitats for our beloved bumblebees. Crucially, as well as informing us gardeners, the trust provides a wealth of information and support for landowners who want to do their bit, and a dedicated army of members and volunteers raise funds and awareness in the effort to protect these iconic insects. Thanks to the BBCT and Buglife (another favourite charity), as well as campaigns by Friends of the Earth, the Royal Society for the Protection of Birds (RSPB), the Wildlife Trusts, and others, our wild bees and other insects are finally receiving the help and recognition they so desperately deserve and need.

I have, thankfully, had the chance to watch many bumblebee nests complete their life cycle, ending in the production of the new queens and males that ensure the survival of the species. And though the nest in our patio wall is sadly doomed, there are at least three thriving colonies, that I know of, on and around our allotment this year. Two of these – one an Early bumblebee colony, the other a Buff-tailed colony – are already well established and producing males. The third, a Common Carder colony, is a little further behind. The three colonies differ in size and character. Had I enough time to record all the comings and goings of each nest over a period of time, I might be able to hazard a guess as to their respective populations and where, exactly, they are in the life cycle. As it is, I am only able to label them as 'extremely busy and bursting at the seams', 'not so busy but still successful', and 'busy-ish, but quite laid back'.

The Buff-tailed nest under the compost heap is by far the busiest; indeed, at times, it seems the workers are queued up at the entrance, waiting to get in to deposit their enormous pollen loads. Some of the workers are so large that I could easily mistake them for queens, whilst others are no larger than my little fingernail. I would love to think that the foundress of this nest might be the queen Rob found sunning herself on the dwarf comfrey by our compost bin earlier this year, but this is wishful thinking. Either way, I am happy to see this colony is thriving on our plot.

The Early bumblebee nest, which I found underneath some leaf litter, is less busy. By that, I don't mean its workers are less busy, but rather there

are fewer of them. Early bumblebees are the smallest bumblebees in Britain and Ireland, and this colony's workers are all quite diminutive. Yet, despite their size disadvantage, they were the first to produce males of all three colonies, and I am almost 100 percent sure I saw a new queen coming out of the nest last week. I would love for her to establish her own nest nearby.

The Common Carder nest is as busy and active as the others, but somehow seems more relaxed. I have spent more time watching them than the others. Their nest is located directly underneath the water trough where everyone on the allotment fills their watering cans. This communal trough is situated right on the corner of our plot, so I notice the happenings at this nest several times each day. The nest's entrance is at the front of the trough, beside the very patch of grass that most people stand on whilst filling their watering cans. I am worried the bees will be trampled on, and have told as many people as I can to watch out for them, but still I have to keep clearing their entrance where it has become clogged up with compacted soil and grass after heavy-booted feet have trodden on it. The bumblebees, bless them, seem completely unperturbed by this.

But there was one day, earlier this week, when I found three or four of them crawling around the grass, trying to find their way back into the blocked-up tunnel. I don't know how long they had been there, but as I cleared away the grass, they crawled right over my fingers and down into the nest to deposit their pollen. No fuss and no bother. Common Carders are, in my experience, the most gentle of all our bumblebees. I have a bit of a soft spot for this nest's residents.

I feel privileged to have witnessed the comings and goings of these bees and many more on our allotment and in our garden. More than that, I am glad to be *aware* of them. It amazes me that I spent so many years of my life not noticing the bumblebees right underneath my nose. I guess it must be down to some kind of 'selective seeing', a bit like selective hearing – where you hear only what you want to hear – only in this case, you see only what you want, or what you perceive you 'need' to see. I can't turn the clock back, but I am committed to doing more than my fair share of seeing and hearing now.