

Red Mason Bee *Osmia bicornis* laden with mites.

Wendy Carter

I was enjoying the warm sunshine on the evening of Sunday 21st May 2017 and admiring my newly created garden (dug last September), which was buzzing, literally, with life. There was a pot of chives next to last year's new bee hotel, which had several *Bombus pratorum* workers and males feeding on it, and the *Osmia bicornis* (red mason) bees that had been emerging from the hotel over the previous couple of weeks were busy making new bees.

As I started to water in new seedlings in front of the bee hotel, I noticed a bee struggling on the soil. At first, I thought I'd inadvertently 'downed' her with water but it turned out that she had very recently emerged from the bee hotel and fallen into the pot. She seemed to be caked in dry mud but a closer look showed her to be absolutely covered in mites (01). She walked onto my finger for a moment or two before attempting take off. She wasn't very steady in her flight - well she had only just woken up - and quickly landed on my rosemary bush; and there she remained, soaking up the last of the sun's rays, for the rest of the evening. At one point I did try to remove some of the mites - they came away easily enough and were several layers thick - but she got fed up with me doing that and tucked herself deep into the rosemary spines.



01. Red mason bee *Osmia bicornis* covered with mites. Wendy Carter.

It's reasonably common to see a bumblebee with one or two mites attached to them. These generally don't do any harm to the individual bee and are simply hitching a lift. Others, however, are more sinister and in numbers like those seen here, the news must be bad for the bee. Some mites eat the pollen that's been left for the developing larvae but, as they breed rapidly, they can out-compete the bee for its food.

Over the last couple of years I've become aware that, whilst bee hotels are fantastic for us to learn about bees and to help provide much needed homes for them, there is a balance to be struck between a healthy home and one that has become laden with parasites and other bad news stories for bees. I have four bee hotels of different ages and it's interesting to see that bees will not use the older ones, even though I think I've cleaned them out. Finding this mite-laden bee has prompted me to look a little more closely into this. Mites of the *Chaetodactylus* genus, which these may or may not be, have two states - mobile and immobile. The mobile mites are the ones that hitch a lift to the next nest in order to generate more mites; the immobile ones wait in the nest for the next unsuspecting bee...they can lie in wait for several years for this to happen. So even a cleaned out old bee hotel may not be a safe haven!

Perhaps the answer to the bee hotel problem is to have fewer, more spaced out holes per hotel and to have more of them dotted around our gardens rather than fewer hotels in one place? It seems that one of the major problems for bees is caused by unnaturally high nesting densities that allow parasites easy access to many nests?

I'm now left with a dilemma. My bee hotel was brand new last year (so any mites and parasites are also brand new) and has been well used by both *Osmia* (mason) and *Megachile* (leafcutter) bees although there is still room at the inn. I have a new hotel but the bees that have emerged so far prefer last year's version. This mite-laden bee appears to be the only bee with mites but research suggests that bee mites could expand to other tubes and holes in the hotel. I can't discard the hotel because there are still *Megachile* bees yet to emerge...and *Osmia* bees have already started to lay and provision this year's young. I will, however, be keeping a very close eye on proceedings and keeping my fingers crossed that there's at least another year of healthy hotel left before its all change at the inn.

I'd be interested to hear about other stories of bee and bug hotels - whether people are seeing an increase in parasites or parasitised cocoons...or not! Are we storing up trouble for bees and providing dinner on a plate to their parasites?

References

The following web links are to two research papers and a website that claims to solve the bee hotel problem although it is partly advertising.

www.bulletinofinsectology.org/pdfarticles/vol58-2005-141-152krunic.pdf

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