

Primary Science

In Conversation with MG Leonard

Verity Jones and Amanda Webber met up with M G Leonard – author of Beetle Boy - to talk about why getting the science right in children’s fiction is so important.

Whilst many science classrooms might enjoy a bug hunt, a report by Buglife (2022) shows that there has been a 60% decline in flying insects across the UK over the last 20 years. Continuation of this trend will lead to catastrophic impacts on people and the planet. Whilst for some children and teachers, the thought of a beetle crawling over them is a delight, for others it incites significant fear or distress that can see people go to extreme lengths to avoid insects. Verity and Amanda caught up with MG Leonard, author of the Beetle Boy trilogy, to find out how this book might inspire an interest in understanding and protecting insects.

V and A: You’ve written a book about superhero beetles – have you always loved them?

M.G: As a child I was insect phobic. I hated them. I mean, pretty much all insects I thought were horrific. I was a real scream and run-away kid.

V and A: What changed?

M.G: When I had my first son, I watched him mimic my phobia, my fear. I remember a house fly in the living room and him screaming and crying. I realized, of course, it was learnt behaviour and that was the first time that I really questioned my behaviour and wanted to do something about it. I figured that learning would be the first step. I needed to learn about insects so that I could actually explain to my child why not to be scared of them. I needed to get myself educated. The size of my ignorance was epic. I thought a beetle was only one creature. I did a google search and I couldn’t believe what I was seeing about all these different species of beetles, these different colours and sizes.

V and A: With your new interest in beetles, what happened next?

M.G: I became obsessed because I realized that, had there been a book that had explained these things to me when I was eight or nine years old, I might not have spent my adult life being terrified and perpetuating fear. And one of the things that really annoyed me was that I very quickly realized that there's a gendered attitude to the fear. I didn't want my son to be labelled as weak and cowardly because he was afraid, while this response was acceptable for girls this response was not acceptable for everyone. I felt that there needed to be some positive narratives for children to read that actually went into the science of insects and showed just how incredible these creatures are. I assumed someone must have written these books, but I found none. These books needed to exist so I came to the conclusion that I would do that.

V and A: How did you prepare for writing Beetle Boy?

M.G: At the start I didn't truly understand the vast field of science that the study of *Coleoptera* is. It took me 6 years of studying beetles in some depth to actually have enough knowledge to begin to craft a story that would function in the way that I wanted it to. It then took me 10 years to write the book.

V and A: The beetles you create in Beetle Boy have some amazing skills, some have incredible strength, others blow acid out of their bums. How scientifically accurate is this?

M.G: After working on the manuscript for 10 years and then getting an agent and a publisher I knew I needed a scientist to go through it all and check for inaccuracies. While I'd done a lot of research, I felt very insecure because I had no qualifications, so I wanted an entomologist to read it and to go through it and point out all the errors. I got in touch with Dr Sarah Beynon from Bug Farm in Pembrokeshire. Two weeks later I got a message that she'd read the whole thing and loved it – there were errors, but she'd help me with it. It was really emotional hearing that. Sarah was the first entomologist who actually said yes, this is what was needed.

V and A: How did you choose which beetles to include in the book?

M.G: I narrowed the field down by looking for the biggest and the smallest and the weirdest and the funniest and the freakiest! I didn't want to constantly be going 'this one's brown and this one's brown and this one's brown' – that's boring. I had to bear in mind that I was trying to write a really engaging story that shows the diverse range across the species and how beetles do so many wildly different environmental jobs. I had my top 50 species. I knew that my young protagonists would have a beetle companion, and that the beetle companions had to be kind of superhero beetles. They had to have something really interesting about them that made them stand out above all others. The rhinoceros beetle was my top choice right from the start because it's the strongest creature on the planet and its size was really appealing. I realized I wanted to balance the children and the beetles - that each child has a deficit, a lack in something. Darkus's vulnerability at his dad disappearing is balanced by the strength of the rhinoceros beetle, Bertolt is afraid of the dark, so he has a firefly; Novak is obsessed with being pretty and loathes her body so has a jewel beetle. Each of the hero beetles was chosen for its appealing nature and how it worked with the children.

V and A: Some of the beetles you chose to showcase were familiar, but a little bit different – like the ladybirds...

M.G: Yes, I used yellow ladybirds – most people are familiar with the red and black spotty ones and think they're pretty cute. I wanted to mess with this. I wanted people to recognise the ladybirds and think 'they don't exist' – but if they looked into it they would find they very much *do* exist. Ladybirds are brutal, savage insect killers and hunters that squeeze bad tasting blood from their kneecaps when they're under attack. If I was surprised by a fact then it went in the book, as I thought readers might find it surprising too. But it couldn't be too scientific. If something took too long to explain I'd lose my reader, so I had to decide what went in.

V and A: Not to give the end away for those who haven't read Beetle Boy yet, but some key beetles lose their life in pretty nasty ways. Why did you do that?

M.G: I wanted to make people sad that the beetles they had grown to love through the story had been killed. I hoped this would make people think twice before killing an insect themselves. I want to try and make the reader care about insects which is hard, they're invertebrates. If they were mammals, it would be a lot easier with their fluffy coats and smiling faces, they're beating hearts and breath we can see. Mammals know how to read other mammals, we know when a mouse is frightened, we know when an elephant is frightened. Insects don't have lungs; they don't respire in the same way. It looks like they are

moving without breathing – like a zombie. We don't know how they feel, what direction they will move in, whether they fly. It's important for children to know that. While your brain is telling you 'its a zombie', actually an insect is breathing through holes in its exoskeleton and the oxygen is passing through its body. It's very much alive.

V and A: What would be your advice to children (and adults) writing about insects?

M.G.: Often people get very poetic with their prose when writing children's fiction and they describe a scene beautifully, but they never include insects. If they do include insects, it's an annoying wasp rather than the leaf beetle that is part of this beautiful nature scene. In reality, if I took you into a forest and there were no insects that would mean the forest was dying, and that's scary. We've been sanitized a lot. Trained to not see insects. Many children don't have the vocabulary to describe them. I want to give children that vocabulary so they can go out and talk about insects and not have a grown up turn around and say 'no, you've got that wrong'. In all my books I have a level of consultation and detail. It's important.

To help make insects more visible for children, M.G. Leonard has also written a great non-fiction book about beetles, *The Beetle Collector's Handbook*.

You can also get your class involved in the Bugs Matters survey check out:

<https://www.buglife.org.uk/news/bugs-matter-survey-finds-that-uk-flying-insects-have-declined-by-nearly-60-in-less-than-20-years/>