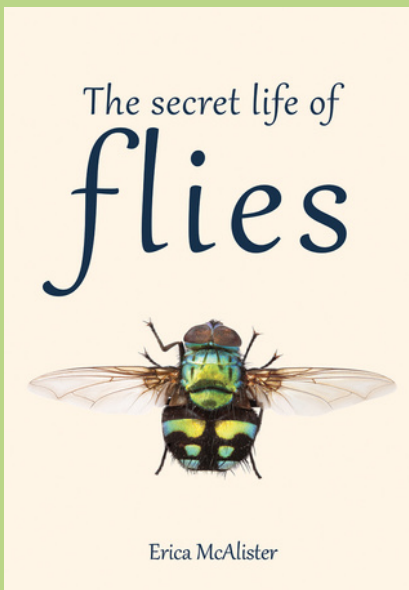


An Interview with Author Dr. Erica McAlister



The Secret Life of Flies, Erica McAlister,
Firefly Books
(paperback), 2022,
248 pages

"No other group is more adaptive, crazy or more ingenious in their morphology and general bad-ass behaviour."

Your book is full of wild stories of different flies' behavior, morphology, and relationships to other species. We love your charming style of writing and your enthusiasm for each species. What are your favorite stories in the book?

I think most folks forget that flies are animals, albeit very small ones that pretty much do everything we do! I love the behaviours and adaptations associated with flirting and feeding. What about the some of the dagger flies having an inflating abdominal sac - a bum that blows up, to show the males how fecund you are. Or imagine evolving to live most of your life in a camel's nostril or in the stomach lining of a rhino, as the bot flies do. Or bog snorkeling in a compost heap by breathing out of your posterior or anal spiracle as do many of the hoverfly larvae. Those are just some of the stories that make me smile.

Given the documented decline of insect population in the world, what is the role of collecting in research and education? Do you advise those wanting to learn about insects to continue to collect?

Collecting insects is absolutely vital. Many species are not possible to identify without studying their genitalia (how we tell species apart) and with tiny species, this is not possible without catching them. Each specimen has a story to tell - we can study their morphology to see how species have changed over time to study the impact of climate change. We can look at their chemistry, their gut contents, their bacterial load - in fact there are so many questions we can ask from the insects. We can learn a lot from images, and these too are important to help us learn about diet, behaviour and habitat preferences. But to enable us to understand the past, present, and future, we need to collect.

You've written about your childhood fascination with the natural world. What are your favorite memories of following your curiosity? Who influenced you the most? What inspired you to select flies as the focus of your research?

I'm nosy and spent an awful lot of my childhood lying on my belly, watching tiny patches of grass to see the ants, spiders, slugs - everything small and wonderful, all getting on with their business. My University lecturer, Dr Dick Askew, once scooped up a load of insects and said, 'this one eats this, this one maims that' and so on, I was hooked - so much fascination. And as for flies - they are everywhere - in all these places, doing all these things and just getting their tarsi into every little bit of mischief that they can.

What is the role of rewilding projects and the planting of native species in bolstering insect populations? Can an individual make a difference?

For the last couple of years, I have been working with Operation Wallacea, a research organisation that offers opportunities to high school and university students to work alongside scientists. Thanks to some bold management we are now seeing species that have not been recorded in the UK for years, and populations of existing ones at levels not seen since my childhood. It's not only answer but rewilding is definitely part of the solution. Planting native species is another. Many of the insects in the UK haven't evolved to live on introduced species and so need natives to sustain them. And it's not just the big landowners that can make a difference - small gardens, allotments, plant pots - it all helps.

Erica McAlister is curator of Diptera at the Natural History Museum, London. As a child, she kept dead mammals to watch the maggots emerge, and as an adult admits to "squealing like a child" when rummaging through the museum's collections. She conducts research all over the world.

Winner: ZSL/Clarivate Analytics Award for Communicating Zoology

Can volunteers be a factor in the support and understanding of insect species? What are some of the most exciting ways volunteers have been involved?

In my field, volunteers are essential. I started at the museum as a volunteer and now have a wonderful cohort that help me process and digitise both new material and existing material so we can provide information for free online. That's a huge amount of data that can be used for asking important questions about what is happening to our planet. Some of my volunteers are working on material that may contain new species to science - that is quite something for all of us to be dealing with. Lots of people volunteer at bioblitzes and other monitoring events to tell us what insects are found there. Currently I am the chair of the Dipterists Forum - a UK organisation dedicated to studying and conserving the flies in the UK where hundreds of people give up their free time to help identify species, write keys, monitor habitats and much, much more.

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CHAPTER 2

The pollinators

What kind of monster could possibly hate chocolate?

Cassandra Clare - *Clockwork Angel*



HATE CHOCOLATE? Well, I do. I simply detest the stuff - have done for years. I dislike the texture and the way it slimes down your throat, but most of all I don't like the smell - just thinking about it turns my stomach. Even I have to admit this is not the most normal of dislikes. It is ironic considering my love of flies. Confused? Flies, you see, are the only pollinators of chocolate, or more specifically *Theobroma cacao*, the cacao or cocoa tree. This plant species has a complex reproductive structure, so complex in fact that only one group of very small flies, amusingly known as No See Ums, can pollinate it. This group, from the *Forcipomyia* genus of the family Ceratopogonidae, are, along with the rest of the family, known as the biting midges. Biting midges are cursed across the globe for ruining many a day in the countryside, especially the infamous Highland midge swarms in Scotland. According to her diary, Queen Victoria was half-devoured by these little ladies whilst at a picnic in Sutherland woodland in 1872.

The hirsute form of the male chocolate midge, *Forcipomyia* sp., is essential for cocoa pollination.