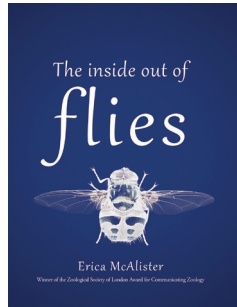


The Inside Out of Flies

By Erica McAlister. 2020. Firefly Books and London Natural History Museum. 288 pages, 24.95 CAD, Cloth.

Erica McAlister is the flies' best friend—knowledgeable, experienced, passionate about both her chosen field and turning others on to the mysteries and magic of the Diptera. A natural teacher, she spends a good deal of time and effort engaging the public through programs at the London Natural History Museum—



as her webpage there reveals—for which she has been recognized through the Zoological Society of London Award for Communicating Zoology. This is her second book—her first, *The Secret Life of Flies* (2017, Firefly Books), was reviewed in these pages in 2017 (Bocking 2017). The two books are similar in many ways—the same quality of production (including sewn binding), style, page layout, use of excellent photographs and diagrams to illustrate her topics, and back matter in tiny font; even the covers are similar, the second being a negative, in the photographic sense, of the first, making them companions on the bookshelf.

They differ in substantive ways, of course. While *The Secret Life* explored the various roles flies play, from pollinators and detritivores to predators and parasites, this one takes a morphological look at the flies themselves, exploring the extensive and amazing differences among families and species from Pre-adulthood (Chapter 1) through all the major body parts, from head to terminalia, in Chapters 2–9. Not only do we learn a lot about each of these areas, we are often reminded how impossibly much remains to be learned. Important subthemes include the connection between research on flies and developments in human medical and other technologies. We learn, for example, of important research into the medical uses of maggots, particularly in healing of wounds (pp. 36, 45–47), but also in figuring out how nanorobots could be used in “moving drugs or repair materials to target certain specific areas” of the human body (p. 45). Research into the functioning of mosquito mouthparts is leading to “bioinspired microneedles” that are “smaller and less painful” than current syringes (pp. 124–125). And did you know that, owing to the capacity of larval midges to tolerate varying levels of oxygen, study of their head capsules results in “a midge thermometer, to help us understand past climatic events, and previous atmospheric concentrations of oxygen” (p. 33)?

McAlister eschews anything like a standard textbook approach, telling stories instead, often about the fascinating and highly variable extremes exhibited by this large and disparate group. A North American tephritid that mimics the jumping spider that is its primary predator (pp. 182–184), and another fruit fly species, 3 mm in length, whose males produce curls of sperm up almost 6 mm long, “the longest known sperm of any animal on the planet” (pp. 255–256), are but two examples among many. Her personal experiences in different parts of the world—she has studied Australia, Costa Rica, and Dominica—also enliven the book. In the process, McAlister marshals a wide array of sources, from the historical work of early dipterists to research as recent as last year. In short, she provides an often fascinating array of information directed at interested lay folks and would-be dipterists, with many of the works mentioned being organized by chapter and listed in Further Reading. The result is a fresh appreciation of these arcane animals that all too often are seen from the working end of a fly swatter or can of repellent.

One other substantive difference needs to be mentioned, however, and that is the regrettable lack of a firm editorial hand. I can't recall reading a book as discouragingly and poorly edited as this one. Numerous errors appear, especially in the first third of the book: misspellings, disagreements of verb and subject, misuse of commas, unclear pronoun referents, incorrect word usage, muddled sentences, inconsistent use of capitals, and citation errors. Her off-the-wall sense of humour, relatively constrained in the first book, here is off the charts, becoming simply disruptive rather than funny. But that, I suppose, is a question of taste...

Shortly after finishing this book, and while still writing this review, I went outside, camera in hand, to take my usual wander around our country place. It was a chilly October day, with little happening in the insect world I so keenly photograph. But a few flies were out and about, and I found myself looking at them through new eyes, a result of reading *The Inside Out of Flies*. My criticisms above notwithstanding, there is much to learn here. This book suffers from the sophomore jinx, but hopefully a third book is in the offing. If there is, I plan to read it.

Literature Cited

- Bocking, E. 2017. [Book Review] *The Secret Life of Flies*. Canadian Field-Naturalist 131:287–288. <https://doi.org/10.22621/cfn.v131i3.2059>

BARRY COTTAM
Corrville, PE, Canada