

BOOK REVIEW

For Love of Insects. 2003. by T. Eisner. Harvard University Press, Cambridge, USA. 448 pp + xi. ISBN 0-674-01827-3 (paperback edition: 2005). \$19.95 US.

“This book is about the thrill of discovery.” Thus begins *For Love of Insects*. It is a book on the wonder of insects, focusing primarily on insect chemicals in an ecological context. Eisner has strung together stories from a career’s worth of research. The stories are divided by subject into chapters such as, “Tales from the Website,” on spider webs and “The Circumventers,” on defensive chemicals. By reading this collection of related stories, the reader not only learns about the specific systems discussed, but also gains a general appreciation for the role of chemicals in insect ecology. What is most impressive is that Eisner has made the book accessible, thought provoking, and a true joy to read without sacrificing any scientific accuracy.

Eisner is a rare breed, becoming increasingly rarer: a highly successful naturalist who is equally skilled in the field and laboratory. Exploratory walks in the field draw his attention to curiosities: Why don’t fish eat whirligig beetles? What kind of insect eats carnivorous plants? Inspired, he then conducts experiments in the laboratory to answer his questions, often using elegantly simple methods. He is quick to give credit to colleagues contributing to discoveries. Even his pet bird, Phogel, gets credit for telling Eisner which insects were palatable.

Eisner’s insect stories are fascinating, thanks in part to his storytelling ability and of course in large part to the insects themselves. There are walking sticks that preemptively spray avian predators before being pecked. There are *Eleodes* beetles that assume a handstand defensive posture, exposing their chemical-packed abdomen, and *Moneilema* beetles that mimic this posture. There is a dizzying complex of six beetle and four moth species, all mimicking various morphs of each other, varying in habitat, and even preying upon each other in some cases. More questions than answers are available for this system in particular, and Eisner encourages future research with the words “doctoral students take note.”

The most interesting section outlines Eisner’s research on moths of the genus *Utetheisa*. Over the course of five PhD students’ research programs, Eisner’s lab has been able to compile a thorough account of their life history, from larval food choice to defensive chemicals to sexual selection to cannibalism. Each time I thought the story was as intricate as it could be, more discoveries were revealed that were even more exciting. Eisner anticipates the reader’s mind throughout, and asks aloud the very questions you want to ask.

One of the best aspects of this book is its photographs. They often tell stories better than any text can. The spray of bombardier beetles, for instance, can be summed up in just a few pictures. Small diagrams of relevant chemical structures are provided, but are bonus material, not necessary for a reader’s understanding of a story. Photographs augment almost every subject of this book, from scanning electron micrographs of ant appendages tangled up with polyxenid millipede tufts, to dissection images that illustrate how antlions avoid eating ant acid sacs. Not only are the photographs beautiful and informative, but they also allow the reader to simply flip through the pictures in the book years after reading to

jog memory of the book's content. If your memory is as poor as mine, you will find this a great benefit.

Although Eisner cares deeply about conservation, he does not focus on it directly. Instead he endeavours to share his wonder of insects with an implied message: if you understand the wonder of nature you will care enough to protect it. It is no coincidence that the chemical structure of Mexican bean beetle defense appears in the final few pages of the book; its elaborate ring structure will impress anyone regardless of chemistry knowledge. These ant-deterrent compounds were previously undiscovered, and Eisner drives home the point that much knowledge can be gained from nature.

My only criticism of the book is a small one. Although the order and family is mentioned for many of the species in this book, it is not given for all. A standard "(Order, Family)" accompanying the first mention of each species would encumber readability little, and would help those readers interested in taxonomic classification.

I strongly recommend this book to any reader curious about insect adaptations. The writing is accessible enough that inquisitive members of the public can enjoy the book. Researchers young and old will appreciate not only the scientific content of the book, but also Eisner's approach to science itself. He combines non-hypothesis-driven observations with "biorationality" logical deductions to derive hypotheses, and then tests them with elegantly simple experiments. He freely offers suggestions of promising areas for future research. He includes some unpublished results, such as how stink bugs' saliva weakens spider webs to facilitate escape. If there is any one thing that encompasses the sentiment of this book, it is punctuation. Question marks are abundant. Wonder is abundant in this book, as in nature.

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