

BOOK REVIEWS

DIXON, A. F. G. 2000. Insect predator-prey dynamics. Ladybird beetles & biological control. Cambridge Univ. Press; Cambridge, ix + 257 p. ISBN 0-521- 62203-4. Hardback. \$74.95.

I am an enthusiast about ladybird beetles. When forthcoming publication of Robert Gordon's monumental taxonomic review of the ladybird beetles of America north of Mexico (Gordon 1985) was announced, I joined the New York Entomological Society to obtain a copy. It allowed me, for the first time, to identify specimens reliably. Dixon's book, in contrast, gives insight into the behavior of ladybird beetles and into the interdependence of their life history parameters, based upon analysis of quantitative data. The two works together (Gordon 1985 and Dixon 2000) give the entomologist reader a sound basis for identifying and understanding ladybird beetles in America north of Mexico. Neither of the two works is intended for the general public.

The book contains 10 chapters, an epilogue, references, and two indices: one taxonomic, and the other on behavior, ecology, structure and physiology. Where chapters in some other books have an introductory abstract, each chapter in this book has a conclusion, not labelled as such, but printed in a sans-serif font; this conclusion is highly worthwhile.

Chapter 1 (Introduction) briefly documents the author's contention that there is a need to evaluate the considerable body of work that now exists on coccinellid behavior. Chapter 2 (Basic biology and structure) deals with the phylogeny of the coccinellid subfamilies, life cycle, external and internal structure, development, survival, reproduction, overwintering, and defense. Here the coccinellid groups that feed on mites, aleyrodids, psyllids, fungi, and higher plants are mentioned briefly, allowing the rest of the book to concentrate on contrasts between the aphidophagous species (about 67%) and coccidophagous species (about 17%).

Chapter 3 (Body size) deals with all the correlates and implications of body size, and Chapter 4 (Slow-fast continuum in life history parameters) does much the same for speeds of movement, development time, and fecundity. Chapters 5 (Foraging behavior), 6 (Cannibalism), 7 (Theory of predator-prey interactions), and 8 (Intraguild predation) are the core of the book, addressing the subjects that the ecologist would expect to find in a book about Coccinellidae. Cannibalism, far from being disastrous for a population, might be viewed as a means of harvesting prey; there is a parallel here with the killing behavior shown by larval *Toxorhynchites* (Diptera: Culicidae) to excess prey.

Chapter 9 (Biological control) begins with the objectives of biological control, reminds us that use of *Rodolia cardinalis* (Coccinellidae) was the formative successful example of biological control in the USA, and then opens up a discussion of the ongoing controversies within biological control. These are: conflicts of interest, and the relationship of biological control to faunal and floral conservation. The chapter points out first that there is yet no proof that use of coccinellids in biological control has had a negative effect on non-target faunas, despite much suspicion to the contrary, and second that use of coccinellids has been used successfully to protect native plants against attacks of adventive ("non-native") pests. The chapter continues with other aspects of biological control using coccinellids (augmentative and cultural control), and then addresses integrated pest management. Chapter 10 is a too-brief summation, pointing out, however, that coccidophagous ladybirds develop, reproduce, and age more slowly than do aphidophagous ladybirds.

Quality control in this book is good. The designer of the cover got away with a typographical error in the caption of the illustration of the back cover, but the author may have had no control over this. Remarkably, I found no typographical errors within the text. I reject the spelling “predaceous” used in this book, on authority of the Oxford English Dictionary (which spells the word “predacious” and explains why), and I question use of the word data in some places as singular (“data is”) and in some places as plural (“data are”). The illustrations (all in black and white) are good and the price is reasonable for this wealth of thoughtful information.

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