

● Preface

Bugs Rule! An Introduction to the World of Insects was originally conceived to meet the needs of an entomology course taught to nonscience majors—the type of course where you have only one shot to get across everything-you-need-to-know-about-insects to a group of students with little previous exposure to the subject. And although such students rarely have the opportunity to take more advanced courses in entomology, it is always hoped that their initial exposure will open them up to a lifetime of learning about the subject.

There have been many influences affecting the development of this book. Probably the greatest have been entomology books that approached the subject by often talking about individual insects or insect groups,—their life history, and how they intersect with humans. *Life on a Little Known Plant*, by Howard Ensign Evans, will always remain a classic in this regard, able to open the world of insects by his use of fascinating details combined with an enjoyable, highly readable style. More recently, there have been a substantial number of contributions by May R. Berenbaum, through both her columns and books (e.g., *Ninety-Nine Gnats, Nits, and Nibblers*; *Bugs in the System: Insects and Their Impact on Human Affairs*) that have helped familiarize and popularize all manner of insect subjects. Also of great influence was the emergence of some highly successful entomology courses around the country that engaged large numbers of students, such as what Tom Turpin achieved at Purdue University, accompanied by his *Insect Appreciation Digest*.

The authors have also reviewed and considered most of the books that have been developed to teach a more standard entomology course. Many do an excellent job in teaching the basics of entomology needed for students with a biology orientation. In our opinion, *The Insects: An Outline of Entomology* by Gullan and Cranston (now in its fourth edition) is a particularly thorough and well-organized book for teaching entomology. *Borror and DeLong's Introduction to the Study of Insects* (now in its seventh edition) by Johnson and Triplehorn is also considered to be a standard and has been used by the authors as the guide for present taxonomy—a constantly shifting and debated subject. Insight into phylogenetic relationships and insect evolution are particularly well handled in *Evolution of Insects*, by David Grimaldi and Michael S. Engel.

Drawing from all these resources and many more, *Bugs Rule!* has its own approach to the subject. Overall, the book is more natural history oriented than are standard entomology textbooks. Many of the “basics” are present—such as anatomy, physiology, systematics—but these are given a fairly compressed treatment within introductory chapters, and later referenced as appropriate when specific insect groups are discussed. The great majority of the book is an introduction to the cast of characters—the various insect orders with a bit of emphasis on some of their more important or poignant (to our eyes) members.

Some features of this book differ considerably from what one finds in most entomology textbooks. Perhaps most notable is the fairly extensive treatment given to the noninsect arthropods—crustaceans, myriapods, and particularly the arachnids (spiders, mites, scorpions, etc.). Most people lacking a formal course in entomology appear to have a somewhat vague idea about the arthropods, considering them all to be “bugs” of some sort. And many—a great many—of the questions that they typically have about “bugs” involve arachnids. So this book tries to include a bit more information about these fascinating animals that typically get sidestepped.

Also likely to be a bit controversial are a few topics that respond to common questions students have expressed. “Do insects sleep?” and “Do insects feel pain?” come immediately to mind. We recognize that there remains considerable debate about such matters. As a result they are typically ignored as textbook subjects; we chose to attempt a coverage of the topics.

Both the authors have long taught the type of introductory courses for nonscience majors that *Bugs Rule!* is designed to support. We hope it will be useful to others who are in the business of increasing entomological (in a very broad sense) literacy or who just want an introduction of their own to the fascinating life of arthropods.