Entomology & Pest Management, by Larry P. Pedigo, 4th edition,
Prentice Hall, 2002, 742 pp., Hardbound. $78.75.

Larry Pedigo's 4th edition of *Entomology & Pest Management* is an excellent text for an introductory course in applied entomology and/or insect pest management. The author assumes that the reader has only a rudimentary background in biology, and perhaps none in entomology. Thus, the reader is led through the basics of insect structure and physiology, life cycles, behavior, classification and ecology in the book's beginning chapters. There is perhaps more biological detail here than needed for undergraduate students of an introductory insect pest management class, yet I have found it easy to selectively assign those sections of each early chapter that are most relevant to my student's understanding of insects and their relationship to people and the environment. A nice revision to the 4th edition is Table 3.2, "Usual characteristics of major pest and beneficial orders", in which diagnostic visual characteristics of mouthparts, wings, etc. are described for agriculturally important insect orders, along with a brief synopsis of the group's importance as pest or beneficial organisms.

The first five chapters of this text will prepare students to 1) use sight characteristics or simple binomial keys to identify most insects (and some mites and ticks) to the order level, 2) understand the basic anatomy, physiology, and life cycles of insects, and 3) know something of how insect populations are affected by climate, competition, predation and parasitism, and other ecological conditions. This is a solid foundation upon which to build an understanding of the theory and practice of modern insect pest management.

The next two chapters provide clear overviews of insect sampling theory and technique, as well as the economic injury level concept as the basis for pest management decision-making. Pedigo and his colleagues have made significant contributions to our scientific understanding of these concepts and the resulting text chapters are very strong. Chapter 8, "Pest Management Theory", provides a bit of historical perspective on the origin of the modern pest management phenomenon as it has evolved from simpler, generally cruder pest control practices. This perspective is useful for current college students to understand how far agricultural pest management has come from the pre-synthetic pesticide days as well as the post-WWII era dominated by chlorinated hydrocarbon materials such as DDT and Chlordane. With an understanding of arthropod biology and pest management concepts and theory in hand, the reader of *Entomology & Pest Management* is now ready to learn the specific pest management strategies and practices as applied to modern agriculture.

The next 6 chapters cover the range of pest management strategies including the use of natural enemies in biological control, managing the crop environment to minimize pest impact, use of insecticides and pest resistant plants, modifying insect development and behavior (particularly with semiochemicals), and use of sterile insect and other genetic tactics. Each topic is developed very well for an introductory pest management class, with sufficient tables and appendices for reference on insecticide types, names of beneficial and pest insects and useful world wide web addresses.

The remaining 3 chapters tie together the theory and strategies just presented into examples and case studies of effective pest management, with primary attention to agricultural crop and livestock scenarios.

Revisions to this 4th edition include sections on site-specific (precision) farming and its application to pest management, a discussion of the Food Quality Protection Act of 1996 and its impact on older classes of insecticides, and an expanded treatment of the use of transgenic plants for crop protection. The larger, more readable 4th edition also has many new and newly edited photos, which make for a more professional publication than the previous 3 editions.

It is difficult for one book, or one college course for that matter, to effectively provide an introduction to the biology, behavior, systematics and ecology of insects, and at the same time address the myriad of pest management tactics and accompanying theory in a meaningful way. *Entomology & Pest Management* accomplishes this goal for the introductory or intermediate level student. While the author indicates the target audience includes graduate students, I have found the material most appropriate for undergraduates, though the text may also serve as a reference on sampling techniques, insecticide nomenclature and formulation types, insect common names, etc. I have successfully used earlier editions of this text for an introductory insect pest management course since the first edition was first published in 1989 and can strongly recommend it for this type of course.

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