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Book Reviews

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Source: Florida Entomologist, 92(1) : 186-190

Published By: Florida Entomological Society

URL: https://doi.org/10.1653/024.092.0135

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BOOK REVIEW

MATTHEWS, J. R. AND R. W. MATTHEWS. 2008. Succesful Scientific Writing. A step-by-step guide for the biological and medical sciences. Third edition. Cambridge University Press, Cambridge. 240 pp. Spiral-Bound, Paperback. ISBN-13: 978-0-521-69927-3 $34.99.

Because one of the most important tasks of any investigator is to let others know of their findings, "Publish or Perish" appears to be the Mantra of academia and research institutions.

Most scientists are proficient at designing and carrying out complex experiments. However, many lack the ability to clearly and concisely express what they have done. This can result in papers being rejected by editors due to shortcomings in language rather than their scientific content. *Succesful Scientific Writing* is a very well-written book and is also an excellent scholarly reference for aiding the reader to write a good article or to prepare an effective lecture or poster presentation. And I particularly like the authors' approach in which they incorporate a humorous and user-friendly way to do either.

Chapter one introduces the reader to the need for careful planning and appropriate use of many resources. The best "media" to publish ones research is also considered. In the second chapter basic details focus on how to write the first draft. The next two chapters help in choosing the best visual aids that will reinforce the major points addressed in a written paper (chapter 3) and in an oral or poster presentation (chapter 4). The following chapters (5, 6 and 7) are dedicated to style, format and grammar. The eighth and final chapter deals with details on preparing to submit your work for publication and how to conscientiously proof-read your reviewed manuscript or galleys. This chapter presents also useful hints for non-native English writers as well as for natives trying to write for an international audience. The final points of the chapter concern ethical and legal issues.

Every chapter is filled with simple (but key) exercises, humorous quotes and even cartoons that make it readable and entertaining. This third edition book is a suitable text in a scientific writing class. In fact, the first edition originated as a manual to help students and new researchers at the University of Georgia to write scientific papers.

This book will be of great help for students, aspiring scientists and those interested in writing technical publications. Following the Matthews's advice will result in better written papers.

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YU, S. 2008. The Toxicology and Biochemistry of Insecticides. CRC Press (Taylor & Francis), Boca Raton, FL. xv + 276 pp. ISBN 978-1-4200-5975-5, hardback, $99.95.

In recent years, insecticide toxicology has become a largely neglected discipline of entomology both in terms of academic departments that continue to offer a course and the availability of updated textbooks. In spite of this neglect, there have been a number of recent developments that make insecticide toxicology both relevant and critical to the broader issues of pest management. The identification of novel and specific target sites and the emergence of highly selective insecticides that affect processes other than neural function have expanded the arsenal of available pest management tools with unique and specific modes of actions. Additionally, an understanding of target sites that have previously been exploited provides important information relative to identification of novel chemistries that can be deployed without complications of cross-resistance. Moreover, the consequences of insecticide misuse including resistance evolution and environmental contamination have not abated and continue to influence regulatory policies and insecticide discovery. It is therefore appropriate and timely that a new textbook becomes available that is applicable to a diversity of students from entomology, pest management and related agricultural disciplines.

The recently published text by S. J. Yu provides an updated and comprehensive introductory textbook for students of insecticide toxicology that incorporates traditional toxicological concepts including uptake, mode of action and principles of xenobiotic metabolism with an up-to-date cataloging of both historically important insecticide classes and novel chemistries and their mode of action. This information provides a solid foundation for developing more complex issues such as the role of xenobiotic metabolism as it relates to selective toxicity and resistance evolution.

The book begins with an overview of the need for pesticides, their pattern of use and the importance of pest insects with regard to agricultural production and transmission of vector-borne diseases. While this is an important component of a basic introduction to insecticide toxicology, this chapter is lacking with respect to the potential adverse consequences of insecticide use. While these topics are covered in more detail in later chapters, a discussion of these points in the introductory chapter would have provided a more unbiased overview of insecticides and equal weight to the potential risks associated with their misuse. The second chapter provides a basic introduction to the diversity of insecticide formulations as well as the non-pesticidal components of these formulations. Chapter 3 provides a similar basic introduction to pesticide regulations but is somewhat limited by its focus on U.S. laws and legislation.

A major contribution of the text both in terms of importance and page length is Chapter 4 which provides a comprehensive listing for major and minor insecticide classes. The classification is based strictly on chemical structure and although never specifically identified, appears to be loosely organized according to chronology of discovery. While this chapter provides a valuable reference for finding information related to structure and physical and chemical properties of specific active ingredients, it lacks a general description of insecticide mode of action. This topic is covered in Chapter 7 and is organized by specific target sites. Each section provides a general background for specific target site followed by a listing of the general insecticide class or specific active ingredient that interacts with that target.

The chapter on evaluation of toxicity (Chapter 5) provides a descriptive outline of various bioassay methods for both insects and higher animals and importantly provides insight into calculation and interpretation of probit analysis. I believe this is one of the more important aspects of coursework in insecticide toxicology, and this chapter provides a foundation for students to explore the topic in greater detail and to pursue their own bioassay experiments.

The chapters on insecticide uptake (Chapter 6) and metabolism (Chapter 9) offer introductory information that provides a necessary background for the more interesting and more developed topics related to species differences in xenobiotic metabolism (Chapter 9) and resistance evolution (Chapter 10). The final chapter on pesticides in the environment (Chapter 11), like many of the other chapters, provides the reader with good basic information on topics such as environmental fate and impacts on non-target organisms.

In general, the author presents material in an easy to read outline that is well-organized and with typos hard to find. The references that accompany each chapter appear to be accurate and the 25-page index is for the most part thorough and useful. In many of the chapters, the author provides a list of relevant reviews for the reader to consult if more detailed information is needed. The book is illustrated with many line drawings and tables providing the reader with ample opportunity to interpret data that enhances understanding of a certain topic. This is especially true for Chapters 9 and 10 where information is derived from recent literature. The drawings are detailed, sometimes complex and a little small but are generally supportive of the concepts described in the text.

In conclusion, I believe that this text is a valuable basic reference for students of insecticide toxicology. There are certainly topics that could be

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covered in greater detail but as an introductory textbook, I believe that all the necessary topics are introduced. I have recommended the text for my own course and have received positive feedback from a diversity of students.

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MANSON, R. H., HERNÁNDEZ-ORTIZ, V., GALLINA, S., AND MEHLTRETER, K. (EDS.) 2008. Agroecosistemas cafetaleros de Veracruz: biodiversidad, manejo y conservación. Instituto de Ecología A.C. (INECOL) and Instituto Nacional de Ecología (INE-SEMARNAT), Mexico. 348 pp. ISBN 970-709-112-6, paperback, 210 × 279 mm. The book may be ordered from Ave Optica (a company, www.aveoptica.com), contact: Robert John Straub, Avenida Rafael Murillo Vidal 149-201, Fracc. Ensueño, 91060 Xalapa, Ver., Mexico (or email: aveoptica@yahoo.com), and paid for by debit or credit card at US $25.00 plus $25.00 post (by post office) or $27.00 (by courier company).

Mesophyll mountain forest occupies only 1% of the land area of Mexico but contains more than 10% of all the plant and animal species. In the state of Veracruz, coffee cultivation uses part of the geographic area that is or was mountain forest. Traditionally grown at 600-1,400 m under the shade of tall forest trees, coffee trees are coming under management systems that call for greater input of agrochemicals, or for cutting of the shade trees to allow denser plantations of new sun-tolerant coffee varieties. Some growers have converted their land to other uses when coffee did not provide enough profit. The chapters in this book examine the biodiversity of 13 taxonomic groups of organisms on coffee farms in the Sierra Madre Oriental of central Veracruz. Intensive field studies were made in Mar 2004-Feb 2005 under the auspices of "Proyecto Biocafé" mainly by personnel of Mexico's Instituto de Ecología near Xalapa in Veracruz.

The coffee farms were classified into a progression from **rustic** (in which coffee trees are interspersed among naturally-occurring shade trees and there is only a little management by pruning), through **traditional polyculture** (in which fruit trees are interspersed and fertilizers are used annually), **commercial polyculture** (in which naturally-occurring forest trees are replaced by selected shade and fruit trees, and there is considerable use of chemicals and labor), **monoculture in shade** (using planted shade trees, often of a single species, and regulation of the amount of shade, phytosanitary management and much use of agrochemicals), and **sun-grown coffee** trees without shade and with reliance on input of agrochemicals. **Forest fragments** (without coffee trees) were used as representative of the natural condition. Thus, there were six levels.

The taxonomic groups considered were shade trees, bromeliads, orchids, Diptera, Formicidae, Coleoptera, amphibians, reptiles, birds, small and medium mammals, bats, and fungi. Diverse collecting methods were used, but insects were collected mainly in traps. All specimens except Diptera and Coleoptera were identified to the level of species and their names are listed; Diptera were identified to the level of family, whose names are listed; Coleoptera were recognized to "morphospecies", and placed within families whose names are listed.

Chapter 7 by V. Hernández-Ortiz and J. F. Dzul-Caich reported specimens of 38 families of Diptera collected, with 28 families (119,294 specimens) from or near ground level, and 36 families (20,463 specimens) in the canopy. The dipteran fauna from the canopy showed a similarity gradient matching the complexity of the shade structure. In contrast, the fauna observed near the ground did not relate to the shade structure. Chapter 8 by J. Valenzuela-González, L. Quiroz-Robledo, and D. L. Martínez-Tlapa reported 106 species of Formicidae. Species richness and diversity increased with greater complexity of arboreal structure, but abundance decreased. Chapter 9 by C. Deloya and M. M. Ordóñez-Resendiz reported 59,402 specimens, belonging to 61 families of Coleoptera with ≈626 species. Beetles from the soil were the most abundant (57,052 specimens) and most diverse (50 families); abundance (2,139 specimens) and diversity (46 families) in the understory were lower; abundance (218 specimens) and diversity (24 families) in the canopy were still less. For the soil fauna and the canopy fauna, the greatest beetle family richness was on farms with rustic management, and for the beetle canopy fauna those rustic farms had the second highest family richness. It is likely that substantial numbers of the Coleoptera and Diptera belong to species that have not yet been described; whether these descriptions can be completed even within the next decade depends upon how much taxonomic expertise can be focused on them, but such effort is undoubtedly not something that will be funded by "Proyecto Biocafé." Again and again this problem of incomplete taxonomic knowledge is encountered in ecological studies in the Neotropics.

Similar works were performed with the other taxonomic groups. They resulted in the selection of 34 bioindicator species and 50 detector species (Appendix 20.1), all of which had to be named species so excluded Coleoptera and Diptera, but included 25 ant species. Chapter 21 gives the overall conclusions of the study in terms of effect of styles of management of coffee farms on biodiversity, what could be done in terms of management of coffee farms to promote biodiversity, a complex subject involving the necessary profit for the farmers, management of pests and soil fertility, production of certified "organic" coffee, and carbon sequestration.

A further entomological aspect included is pollination of coffee flowers (Chapter 18 by C. Vergara, J. Contreras, R. Ferrari, and J. Paredes). It identified and counted insect visitors to flowers

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and experimented with exclusion of insects by bagging flowers. It concludes that on the two rustic farms, and one unshaded and one monoculture farm studied, natural levels of pollination (i.e., by insects other than managed colonies of *Apis mellifera*) were inadequate even though they were a little higher on the rustic farms.

The book is written in Spanish, each chapter with a Spanish resumen and English abstract. It has a nine-page subject index followed by 15 plates each with three to seven color photographs mostly with habitus views of organisms but with some environmental views.

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