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Book Reviews

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BOOK REVIEW . . .

Trypanosomiasis and Leishmaniasis: Biology and Control, G. Hide, J. C. Mottram, G. H. Coombs, and P. H. Holmes, editors. Published by CAB International, Wallingford, UK. 1997. 366 pp., $100 U.S. ISBN#0-85199-139-4.

This book is a compilation of papers contributed by participants at the British Society of Parasitologists Trypanosomiasis and Leishmaniasis Seminar at Glasgow University (UK) in September 1995. After an introductory section describing the history of the development of our understanding of these organisms, the contributed papers focus on the familiar hallmarks of current molecular research into the biology of these two kinetoplastids. Topics covered in detail include selected biosynthetic and metabolic pathways, antigenic variation, chemotherapy and drug design, and molecular epidemiology.

The first chapter, "Landmarks in Trypanosome Research," provides a fascinating account of the development of the trypanosome system and the historical importance of this system to the discipline of protozoology as a whole and molecular parasitology in particular. The second chapter, "Public Health Status of the Trypanosomiases and Leishmaniases," reviews the current state of these diseases in human populations worldwide. The next eleven chapters focus on a variety of discipline-specific molecular research areas. These include mapping the African trypanosome genome; the glycophosphatidylinositol (GPI) family of molecules in trypanosomes; synthesis of lipophosphoglycan (LPG) of *Leishmania*; antigenic variation and variant surface glycoprotein (VSG) expression sites in African trypanosomes; glycolysis, polyamine metabolism, sterol metabolism and proteinases of trypanosomes and *Leishmania*; and cell signaling, protein phosphorylation, and protein kinases in trypanosomes.

The remaining chapters review treatment, transmission, and control aspects of organisms within these two genera. Topics include chemotherapy and drug resistance; molecular epidemiology and evolutionary genetics; and parasite vector interactions. Only three chapters, "The Socio-economic Impact of African Trypanosomiasis," "The Population Dynamics and Control of Zoonotic Visceral Leishmaniasis" and "Control Strategies for African Trypanosomiases: Their Sustainability and Effectiveness," are devoted to any large extent to discussion of control programs. As a whole, despite the subtitle "Biology and Control," the text contains much more material on the basic biology of these organisms than it does on the application of this knowledge to control programs.

Clearly, this book is primarily concerned with agents of human disease, although two chapters, "The Population Dynamics and Control of Zoonotic Visceral Leishmaniasis" and "Effects of Trypanosomiasis on Reproduction in Domestic Ruminants," both include material of interest to wildlife biologists and veterinarians working with these organisms. Overall, this new volume provides an overview of current molecular and field epidemiological research on *Leishmania* spp., *Trypanosoma cruzi*, and the African trypanosomes. Due to this broad scope, this book is an assemblage of somewhat disparate information, and will be most appreciated by specialized researchers in these fields. Despite the inherent interest and great value of these review papers, the highly technical molecular information which dominates this text may not be relevant to wildlife professionals or veterinarians other than those directly involved in cutting-edge molecular protozoology.

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BOOK REVIEW. . .

Fish Diseases and Disorders, Volume 1, Protozoan and Metazoan Infections, P. T. K. Woo (editor), CAB International, Wallingford, Oxon, OX10 8DE, UK. 1995. 808 pp., $175.00 US.

This book is the first in a series of 3 volumes dealing with the diseases and disorders of finfishes and shellfishes. It represents an admirable compilation of the current knowledge of protozoan and metazoan parasites of fishes. P. T. K. Woo aims the book primarily at researchers and fish health practitioners. He has assembled an impressive group of authorities to deal with their own fields. As such, most chapters provide reasonably thorough treatments of the subject. We were impressed by the scope of the book and believe that it will be a useful addition to a fish health worker's collection.

The 18-chapter volume essentially treats protozoan and metazoan parasites according to their taxonomic groupings. For the most part, each phylum of parasites is treated as a separate chapter; but, mercifully, the larger, more diverse phyla are broken down into smaller, more useful chapters. Even so, there is, understandably, a great deal of generalization, particularly among the "protozoans," to keep the subject matter manageable. Unfortunately, for the novice this may give the impression that all organisms in a particular group operate in the same manner. The volume is complete with a general review of the piscine immune system, a chapter on fish-borne zoonoses, and a chapter on immunological techniques for the study of fish parasites. Several of the individual chapters offer enough immunology to allow each chapter to stand alone, but they usually complement the review.

Each chapter follows the same basic format, although not necessarily in the same order. Authors cover the taxonomy/systematics and evolution, morphology, life cycles, physiology, diagnosis, and prevention and control of the various parasites. Most authors also provide recommendations for future research, a touch that we feel is useful. In fact, we feel that the great strength of the book is the combination of pure and applied science. For example, the chapter on arthropods (arguably the best in the book) provides enough detail so that someone wishing to conduct research on sea lice, for example, can find the background and current information necessary to formulate a focused, coherent question; someone wishing to solve a problem with sea lice in aquaculture can find not only the suggestions for prevention and control but also information (including the life history, ecology, and pathology of the parasite as well as mechanisms of disease and the immune response to the parasite) to help them understand the parameters of the problem. Probably most valuable, however, is the extensive reference section for each chapter.

There are relatively few typographical errors and the editing is generally good. Micrographs are generally of high quality, and the quality of reproduction is good. There are some problems with the figure numbering system (Chapter 2 uses a different system than most of the other chapters), the labeling of some of the diagrams (diagrams in Chapter 9 have some labels that are not in the caption), and the confusing spacing in some of the taxonomic summaries (Chapter 3, for example). The reader should further note the erratum on the inside cover to correct another problem with the figure captions in Chapter 13. However, we recognize that the lack of a few of these problems in an undertaking of this magnitude would be unusual, and none distracts from the book's value.

As with any book of this nature, there is variability in quality among chapters and some information was obsolete (or was not included) by the time the book was in print. Nevertheless, we reiterate that the book should be a useful reference for fish health workers for years to come. We encourage its purchase so that students, teachers, researchers, and practitioners of fish health can have access to it. Unfortunately, the price may exclude its widespread appearance in personal libraries or as a educational tool.

The authors note in the conclusion of the last chapter that they hope the chapter will stimulate and challenge workers in the field. We believe that the entire book serves this function.

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