BOOK REVIEWS

PARASITIC DISEASES

Fifth edition. By Dickson D. Despommier, Robert W. Gwadz, Peter J. Hotez, and Charles A. Knirsch. 363 pp., illustrated. New York, Apple Trees Productions, 2005. $69.95. ISBN 0-9700027-7-7.

As a medical educator, I have always felt privileged to teach parasitology because it is fascinating — albeit the study of worms may be both fascinating and disgusting, the study of insects may be both fascinating and frightening, and the study of protozoa may be both fascinating and amazing. Teaching parasitology is fun, and when it is taught by a quintessential master such as Dickson D. Despommier — the Obi-Wan Kenobi of parasitology, as I have witnessed him to be in a classroom setting — it is pure magic for the students.

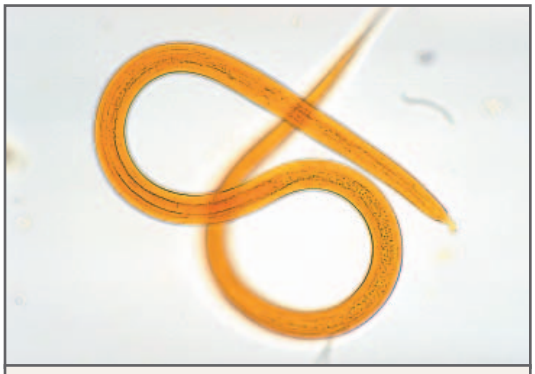
This book, written by Despommier and three of his colleagues, is concise, accurate, logical, and oriented toward the student — not the master. It begins with a short introduction to the world of eukaryotic parasites, followed by chapters on protozoa, worms, and insects, including vectors and organisms that do harm all by themselves. Next, a nicely philosophical chapter on the ecology of parasitic diseases makes it clear that we have evolved with these creatures and cannot simply eradicate them. This discussion is wholly consistent with a soon-to-be published report from an Institute of Medicine Forum on Microbial Threats meeting entitled "Ending the War Metaphor: The Future Agenda for Unraveling the Host-Microbe Relationship."

The book's penultimate chapter, on travel medicine, offers just enough information to whet the appetite, but not enough to teach expertise; this raises the fear that students will practice without sufficient know-how when they travel to the tropics, where the risks are greater than their knowledge. This possibility is true of all areas of medicine, however, and it is experience based on knowledge that makes the clinician. The final chapter is a brief bonus on the pharmacology of antiparasitic drugs, including many new drugs that are still not available in the United States. The appendixes are a nice touch. They include practical advice on diagnostic methods and the handling of infected specimens, a photographic atlas of parasites, and the August 2004 issue of *The Medical Letter*, which focuses on drugs for parasitic infections.

One of the things I have liked best about listening to Despommier's lessons about worms is the logical sequence in which he teaches life cycles. He adds the complexities one by one as the twists in the basic scheme are revealed, learned, and then easily recalled, along with all of the diagnostic and preventive implications for prevention. In this book, Despommier's hand is evident in the chapters on nematodes, although the chapter on hookworms must have been written by Peter J. Hotez, who knows everything about these blood-sucking worms and may one day soon introduce an effective and protective vaccine to prevent them — a first for a worm. Most of the chapters are concise, yet they include new molecular and cellular biologic insights into how these complex organisms work. There are a few editing blemishes, however; these include the use of the word "colony" for "colon" in the drawing of a pinworm's life cycle, and the reference to hepatobiliary ascariasis as HBA, which virtually nobody reading this book needs to know.

The chapters on insects include some striking and scary photographs, although the reader does not get a sense of the size of the animals themselves or of the lesions they cause. As in the rest of the book, these chapters contain brief and useful sections on pathogenesis, clinical disease, diagnosis, and treatment, including how to remove ticks and how to manage the bites of stinging insects.

I liked the chapters on protozoa the least, not because they lack up-to-date information, but because the presentation is too precise and fails to convey the wonder of these organisms in their dramatic and complex life cycles. These chapters also do not capture the near-certainty one should feel that it is quite impossible for many of these organisms to exist but for coevolution. Presumably because of cost containment, the colors of the



Courtesy of the Centers for Disease Control and Prevention/ Dr. Mae Melvin.

Strongyloides (Roundworm) Filariform Larva.

photographs are dull and do not look like the views under the microscope, although the images in appendix C are somewhat better.

I have some other minor complaints. For example, in the foreword, the term "DALY" is defined incorrectly as a "disease-associated lost year," rather than as a "disability-adjusted life-year," the correct definition that is used elsewhere in the text. The DALY, which adds the years of productive life lost because of premature death from a disease or condition to the years lived with a disability because of a disease or condition, has become an important measure of the burden of disease, so it is important to get it right, even in a foreword. Fortunately, few students will bother to read the foreword, although they should certainly read the pioneering work of its author, James Jensen, who with William Trager cultivated *Plasmodium falciparum* malaria in vitro — a true landmark in the history of modern malariology.

I apologize for (excuse the expression) nitpicking, but I expected perfection from these authors, and they have simply proved to be human. Still, the book remains a gem for the current information it does include, in a field in which all too often the past is venerated and modern approaches are denigrated. Students should use it for these reasons, and they should keep it for their libraries, since they will want to refer to it in the future when they need to review the basics of parasitology.

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PHAGES: THEIR ROLE IN BACTERIAL PATHOGENESIS AND BIOTECHNOLOGY

Edited by Matthew K. Waldor, David I. Friedman, and Sankar L. Adhya. 450 pp., illustrated. Washington, D.C., ASM Press, 2005. $119.95. ISBN 1-55581-307-0.

"SIR, I AM ENTIRELY LYSED!" SHOUTED A technician in André Lwoff's laboratory at the Institut Pasteur in 1949, describing cells undergoing lysogenic induction. Phages (short for bacteriophages) are DNA or RNA viruses that infect only specific bacteria. Phages have colorful names, such as λ, T4, SopEΦ, Mu, Qβ, P1, or ΦX174; they come in many shapes and sizes (e.g., tailed or nontailed, icosahedral, filamentous, and enveloped or nonenveloped); they have many different lifestyles (e.g., lytic or temperate); and they can carry genes that increase the pathogenesis of bacteria. They are among the most intensely studied viruses and are perhaps best understood in a molecular sense. This book is essentially a treatise on phages that in 22 chapters, prepared by 52 authors from six countries, describes our current knowledge of these unique viruses and their role in bacterial pathogenesis and biotechnology.

The book is divided into three interesting sections. In the first section, the authors review the history and biology of phages, their life cycles, and aspects of phage evolution and ecology, as well as phage lysis. The second section provides the reader with valuable information about the role of selected phages in the virulence of bacterial infections, such as the lambdoid phages of salmonella and *Escherichia coli*, the tailed mycobacteriophages, phages of streptococci and staphylococci, the bacteriophages of vibrio and mollicutes (mycoplasmas), and some of the more than 400 phages that have been isolated from listeria species. In this section, the authors give the reader a clear understanding of how phages integrate their genetic material into the host genome and alter the virulence of bacteria. For example, the virulence of *Vibrio cholerae* is largely dependent on infection by the bacteriophage CTXΦ, in that the cholera toxin is encoded within the genome of this temperate and nonlytic filamentous phage and only strains of vibrio infected by CTXΦ are capable of causing epidemic disease. Another fascinating example includes the many toxins of staphylo-