Reviews and Resources

BOOK

Practical Guide to Diagnostic Parasitology (2nd ed.)


Parasitology is an important biomedical discipline devoted to the study of diverse organisms, ranging from protozoa to helminths to arthropods. All of these organisms, however, one thing in common: they are composed of one or more eukaryotic cells. Garcia’s book focuses on various approaches to diagnostic parasitology. More specifically, the author provides a large collection of currently used laboratory protocols enriched with supplemental background information that will help investigators to isolate and identify medically important parasites.

Section 1 of this book outlines the philosophy and different approaches to diagnostic parasitology. Garcia provides answers to questions such as: Why do we need to perform parasitology testing? Who should do it? Where should it be performed? What kind of testing should be done? What factors should precipitate the testing, and what should be considered when developing test menus? Garcia also discusses in this section risk management issues associated with STAT testing (i.e., immediate testing, which needs to be available 24 hours/day and 7 days/week).

The second section provides an overview about the current classification system and the relevant body sites affected by parasitic infections. The author provides a detailed description of medically important parasites, beginning with the Protozoa (e.g., amoebae, flagellates, ciliates, coccidia, sporozoa, and microsporidia), continuing with the Nematoda (roundworms), the Platyhelminthes (flatworms, such as cestodes and trematodes), the Pentastomids (tongue worms), and the Acanthocephala (thorny-headed worms), and ending with Arthropoda (e.g., insects, spiders, mites, and ticks). This section is supplemented with three easy-to-read tables: the first table lists organisms which belong to the six major divisions described above that make up the parasite classification system; the second table lists the cosmopolitan distribution of common parasite infections; and the third table provides a list of body sites and possible parasites recovered.

In the following three sections, Garcia describes in great detail the laboratory methods currently used to properly collect and correctly identify parasite specimens. Various collection options (e.g., samples from stool, blood, and other body sites) are discussed in Section 3; routine diagnostic tests (e.g., parasite culture, staining methods, antigen/antibody detection, and nucleic acid-based tests) are evaluated in Section 5; and more specific procedures (e.g., specialized and modified culture and processing methods, as well as staining techniques) are reviewed in Section 4. Garcia described not only step-by-step testing protocols including the composition of reagents but also used tables and flow charts to summarize procedures and options, and to point to the pros and cons of methods.

If investigators want to find answers to commonly asked questions about diagnostic parasitology, they can turn to Section 6. This Q&A section is divided into “Stool Parasitology,” “Tissues or Fluids,” and “Blood.” Garcia discusses issues such as specimen collection and processing, diagnostic methods, immunoassay options, organism identification, proficiency testing, and data reporting.

The final two sections are devoted to parasite identification. In Section 7, Garcia provides comprehensive information related to each parasite: pathogenicity, disease, acquisition, body site, symptoms, clinical specimen, epidemiology, and control. The major emphasis is, of course, on the diagnosis of these parasites. Section 8 contains additional identification aids, such as summary tables, identification keys, schematics of parasites, and photographs of organisms as well as artifacts.

I believe this book is an excellent resource for everyone who is working in the field of clinical microbiology, particularly in diagnostic parasitology. It is also useful as a textbook to instruct students about the medical importance of these diverse organisms and the many procedures used to properly diagnose them. Garcia created a user-friendly book which is written in great clarity with a focus on successful diagnostics. To give three specific examples: important messages about diagnostic parasitology are written in boldface (e.g., “As a part of any continuous quality improvement program for the laboratory, the generation of test results must begin with stringent criteria for specimen acceptance or rejection” [p. 34]); a brief description of how to calibrate a microscope is provided (p. 88 ff.); and the presentation of each parasite in Section 7 (pp. 255–373) has been formatted in a way that it allows easy access and use. Although the book has an index, I would suggest for future editions to include a glossary of important terms used in diagnostic parasitology.

Christian T. K.-H. Stadtlander
University of St. Thomas
Minneapolis-St. Paul, Minn.