Reviews and Resources

BOOKS

Zoonoses: Infectious Diseases Transmissible from Animals to Humans, 3rd Ed.


Seeing that the majority of emerging infectious diseases are caused by zoonotic microorganisms, it is not only public health officials and infectious diseases specialists that need reliable and concise, yet thorough information on zoonoses. This book, authored by nine veterinarians, physicians, and microbiologists, gives such an overview of zoonoses, covering the microbiology, epidemiology, diagnosis, differential diagnosis, clinical management, therapy and prophylaxis of viral (and prion), bacterial, fungal, and parasitic agents. While the book does not provide sufficient detail and depth to satisfy all possible needs and will have to be supplemented by other sources of information when cases or outbreaks are suspected or known to occur, it is clearly a useful resource to have at hand.

What is remarkable for a multi-author work is its consistency. The book contains few factual errors, most of them of lesser importance. Particular attention is paid to the roles of zoonotic agents in (re-)emerging diseases, opportunistic infections, foodborne illnesses, xenotransplantation, and possible biowarfare. The selected references cited are valuable if one seeks sources of further information, and for of the viruses, even PCR methods for their detection are listed. In addition, the book contains several extremely useful appendices listing animal bite infections, infections and intoxications transmissible by food-stuffs of animal origin, iatrogenically transmitted zoonotic infections, zoonoses nationally notifiable in the United States, and zoonoses involving various types of animals. What I miss is another appendix that should cover the differential diagnosis of zoonotic infections, detailing strategies for identifying clinical cases or outbreaks according to presenting symptoms or easily recognized features. This would be extremely useful. I would also like to see more maps illustrating the geographical distribution of various zoonoses, areas of highest incidence, etc.

The book’s value lies in its ability to serve as a valuable source of first reference for medical doctors, veterinary surgeons, clinical and veterinary microbiologists, and public health practitioners. However, even readers with specialist knowledge on zoonoses may find it valuable when it deals with aspects less familiar to them; its breadth is truly impressive.

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Legionella: State of the Art 30 Years After Its Recognition


This book is the result of an international conference on Legionella held in Chicago in 2005. It is a vast compendium of 131 papers divided into four major sections, namely, Clinical and Diagnostic Aspects of Legionnaire’s Disease; Epidemiology and Strain Typing Methods; Microbiology, Pathogenesis, Immunology and Genetics; and Environmental Biology, Detection, Prevention and Control.

Most of the papers in the book are concise, rarely more than a few pages in length, and this synoptic style allows for rapid reading and understanding of the many different studies presented. The references are likewise kept to a reasonable level. The first five papers present a general introduction to the study of the organism, dealing with clinical features of the disease, the treatment of Legionnaire’s disease, as well as diagnostic methods, hospital- and community-acquired L. pneumophila, and risk factors for mortality. Subsequent papers in this section concern themselves with more specific topics such as Legionnaire’s disease in a Spanish hospital, community-acquired pneumonia in HIV patients, nosocomial infections in Copenhagen, treatment with specific antimicrobials, and identification methods.

The second section begins with an overview of Legionnaire’s disease in Europe over the 10-year span from 1995–2004, and is followed by a number of epidemiological studies dealing with typing, antibody determination, travel risk (in Spain), and distribution of the organism in the environment. Two interesting papers conclude the section, number 39 describing death from Legionnaire’s disease after a near-drowning in a Finnish lake, with onset of disease attributed to aspiration of lake water, and number 40, which questions the role of potting soil in South Australia as a potential cause of L. longbeachae infection.

The third and longest section of the book (in terms of numbers of presentations) presents research dealing with the Dot/Icm secretion system, proteins and protein secretion, various enzymes, outer membrane proteins, function of macrophages, flagella, genomics, and genetic diversity. This is, by far, the most specific part of the book. The 42 papers in Section IV describe the occurrence of Legionella pneumophila in various environmental settings such as drinking water, cooling towers, lakes, and hospital
settings, its relationship with other organisms, and control methodologies.

Paper number 113, “Controlling Legionella in Hospital Water Systems: Facts versus Folklore,” suggests drinking water rather than showering as a culprit in transmission of the disease. It would have been interesting to have been present at the discussion following this presentation.

The large amount of material provides something of interest for almost anyone involved with this organism. In addition, many of the papers are relevant for those researchers working in related areas. The last section in particular has a wealth of testing and prevention information which could be used for control of other waterborne diseases.

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Handbook of Media for Clinical Microbiology (2nd ed.)


The successful cultivation of microorganisms in the clinical laboratory plays an important role in the proper diagnosis and treatment of patients by physicians and veterinarians. Yet, the task of isolating microbes from their habitats to which they have adapted is often quite difficult. Thus, microbiologists have created culture media with a certain combination of nutrients that mimic environmental conditions and provide a source of energy allowing microbes to survive, grow, and reproduce in vitro.

Today, there is a large number of liquid and solid media available that can be used by investigators for the cultivation of microorganisms, including pathogens. Depending on the type and combination of nutrients, different categories of media can be distinguished, such as complex media, defined media, selective media, differential media, and enrichment media. The existence of a large number of culture media makes it difficult for microbiologists to identify the one that is perhaps most suitable for the isolation and identification of a certain microbe.

The Handbook of Media for Clinical Microbiology is a comprehensive compilation of over 1,600 media recipes useful for the cultivation of clinically relevant microorganisms. More precisely, the book describes various media that permit the transport, cultivation, and identification of bacteria, fungi, and viruses that are currently known to cause major medical problems in the world. The Handbook also includes media that have been designed for the specific growth and identification of emerging pathogens such as Escherichia coli O157:H7, methicillin-resistant Staphylococcus aureus, and vancomycin-resistant enterococci.

Atlas and Snyder have created an excellent reference book for microbiological media that is comprehensive and, what is perhaps most important, is user-friendly and can save significant time and effort for the investigator who has the task of cultivating certain pathogenic microorganisms. The user friendliness of this book was achieved through the listing of the media in alphabetical order in the table of contents, the main text, and the index. This helps the user to rapidly find the most suitable media for transport, isolation, and identification of pathogens. For example, if a microbiologist needs a suitable medium for the growth of mycoplasmas, there are 13 entries in the table of contents and 24 entries in the index section. If a medium is needed for the growth of an Aspergillus, there are a total of 10 entries in these sections. Or, if one searches for viral media, one can find media useful for the transport of specimens suspected of being virally infected and media that are suitable for the cultivation of cell lines for studying the cytopathogenicity of viral agents.

The description of the media follows a certain scheme: first, the composition of the medium is listed (in most cases per liter), followed by the source (e.g., if a medium is available as a premixed powder; and the name of the company), guidelines for preparing the medium, and a description of its use (e.g., for the transport of swab specimens; for the cultivation, maintenance, or differentiation of certain species; for determination of bacterial counts; for antibiotic assay testing; for use in tissue culture procedures; or for the enrichment of other culture media).

There is also an appendix that provides valuable information about the different types of agars used as solidifying agents in various media, of peptones used as ingredients, of meat and plant extracts, of growth factors, and of selective components. The authors also provide a list of pH ranges of phosphate buffers, as well as a list of commonly used pH indicators and their color reactions. Quite helpful are also the tips for preparing the media, such as the processes of mixing, autoclaving, and filtration. Finally, the authors did not forget to warn investigators about the hazardous nature of some medium components.

Overall, I believe that this book is quite useful for clinical laboratories because it provides a wealth of information about various microbiological media used today. I would recommend this book to microbiologists who work in clinical and public health laboratories, and to investigators in research settings who need to cultivate pathogenic microorganisms. Since the field of clinical microbiology is constantly changing and advancing, I would suggest that the authors periodically update the list of media for inclusion in subsequent editions.

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