BOOKS

Metabolism and Bacterial Pathogenesis

“Although several factors could theoretically contribute to a microorganism’s ability to colonize the intestinal ecosystem, effective completion for nutrients is paramount to success.” So the editors reference researcher Rolf Freter in their introduction to this new, integrative text. This volume highlights this truth with a biochemical focus on bacterial pathogens and the human host. This includes chapters on enteric, respiratory, urinary tract, and intracellular pathogens. Some chapters also focus attention on the role of commensal communities, such as in dental plaque or in the gut through interaction with host immunity. More species-specific topics include central carbon metabolism by Borrelia burgdorferi, regulation of Escherichia coli fimbriae by host sialic acid, and Pseudomonas aeruginosa metabolism during infection of cystic fibrosis patients. Though it is sparse in its figures, this is a timely and information-rich collection that should be a welcome resource for many microbiologists.

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Climate Change and Microbial Ecology: Current Research and Future Trends

As one might expect, this new text nicely reviews important topics in environmental microbiology research related to the increasing trends of global climate change. Editor Jürgen Marxsen does a great job with the breadth of coverage, including chapters on viruses, bacteria, fungi, and protists alike, in a range of environments from marine, freshwater, to soil. Chapters address both the data that is known regarding alterations in biochemistry, biogeology, and community interactions due to climate change, but also highlight areas where data is particularly lacking, such as in sediments and inland waters. The first chapters also incorporate relevance to rising pathogenic risks due to climate change through alterations in abundance of cyanobacteria or Vibrio species, or expansion of freshwater parasite ranges. With multiple black-and-white and color figures typical of journal review articles in each chapter, this is an impressive short overview of a topic with likely broad student appeal.

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Manual of Clinical Microbiology, 11th Ed.

Many readers are doubtless already aware of this extensive and essential reference for current information and practice related to clinical microbiology. Covering organismal biology, disease characteristics, research and diagnostic techniques, antimicrobial agents, and safety practices, the recent 11th edition incorporates the latest findings, particularly the growing genomic and proteomic data available for pathogens. For general interest readers, the opening section of the first volume has excellent chapters of basic information on topics such as microscopy, molecular epidemiology, biothreat agents, and the human microbiome. The remainder of the first volume deals with bacteriology, while the second volume covers virology, mycology, and parasitology. This is obviously an important resource for clinical microbiologists, but it also makes a useful go-to reference for summary and facts needed for teaching the medical/clinical side of the field.

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