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## Beyond Anthrax: The Weaponization of Infectious Diseases

Edited by Larry I. Lutwick  
and Suzanne M. Lutwick

Towata, NJ: Humana Press, 2009.  
374 pp \$149.00 (hardcover).

When did infectious diseases become weaponized, as the title of *Beyond Anthrax: The Weaponization of Infectious Diseases* suggests? Why is this relevant to the busy clinician dealing with Mother Nature's infections on a daily basis? The 2001 anthrax attacks not only reminded us that germs can still be used as weapons but demonstrated that random clinicians will be the first to see and recognize cases of infection caused by bioterrorism.

Although there have been scores of publications on anthrax since 2001, relatively few have been written on other microbes of concern. *Beyond anthrax*, a compilation written by multiple academic, government, and organizational experts, seeks to address this gap. After an introductory first chapter on the history of bioterrorism, approximately one-half of the book (Chapters 2–10) reviews specific Category A and B agents, with most chapters introduced by emblematic cases. Often missing in texts on bioterrorism and comprising one-quarter of this book, Chapters 11–15 speak to public health implications in policy, law, surveillance, psychosocial management of events, and communication with the media. Finally, the book concludes with 2 individual chapters on rapid detection and plant pathogens.

Each chapter is a stand-alone summary. Chapter 1, written by Pro-MED's Stuart Handysides, broadly defines bioterrorism as the threat or use of infections as weapons and presents a unique historical summary from ancient times to the present. Chapters 2–6 make up approximately one-third of *Beyond anthrax* and review the relatively less-covered Category A

agents: smallpox, plague, tularemia, botulism, and viral hemorrhagic fever pathogens. Although all chapters touch on epidemiology, microbiology, diagnosis, treatment, prevention, and possible biowarfare use, each varies in depth, ranging from 6 text-filled pages (tularemia) to 30 pages (smallpox, viral hemorrhagic fever). Chapter 2, "Smallpox and Bioterrorism," is the most comprehensive of the group. It supplements commonly published information on diagnostic criteria and vaccination with sections on monkeypox, use of vaccine in human immunodeficiency virus, similarities to severe acute respiratory syndrome, and genetic and immunologic scenarios. Chapter 6 provides excellent tables of viral hemorrhagic fever viruses associated with bioterrorism that list differences in transmissibility, infectious dose, vaccine availability, and historical use.

Chapters 7–10 address selected Category B microbes and intentional food and water contamination. Whereas Chapter 7 focuses on the naturally occurring "Vietnam time bomb" melioidosis, so-called because disease is caused by reactivation years after exposure in an endemic area, Chapter 8 cites the stability and aerosolizability of *Rickettsia prowazekii* in epidemic typhus fever and its likelihood for substantial spread in a louse-infested population. Chapter 9 groups together commonly-occurring *Staphylococcus aureus* enterotoxin B with *Clostridium perfringens* epsilon toxin and relatively rare ricin in its overview of Category B biotoxins.

In Chapters 11–15 on public health policy and bioterrorism response, Washington Post Science Writer David Brown's examination of "The Role of the Media in Bioterrorism" stands out as a compelling and candid advisory to public health officials. Written before the 2009 H1N1 pandemic, it cites specific examples from the anthrax letters of 2001 and offers concrete, constructive suggestions regarding communication of scientific facts in real time. The legal and surveillance chapters that follow discuss quarantine in the context

of bioterrorism and the logistics of bioterrorism data collection and interpretation, respectively. Chapter 16 focuses on rapid identification methods that use serology, antigen-non-antibody target interactions, and genomics.

All in all, *Beyond anthrax*, which is intended to be a "primer for clinicians and epidemiologists on a variety of agents, organisms, or toxins...of potential use in a biologically attack..." provides much more in its 17 chapters and 374 pages. With its substantial section on public health applications and inclusion of food, water, and plant bioterrorism and the capacity for standardization and expansion of chapter content, it would make a useful overview text on bioterrorism for medical, public health, and post-doctorate students. Newcomers to bioterrorism may also find it helpful to view the Centers for Disease Control and Prevention and National Institutes of Health Web sites on bioterrorism agent categorization for additional background. For clinicians with more time who are still coming to terms with "countermeasures" parlance and who have many preparedness workshops under their belts, *Beyond anthrax* offers a thoughtful review of germs not-to-be-forgotten and why they matter. In short, *Beyond anthrax* moves us beyond anthrax.

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## Animalcules: The Activities, Impacts, and Investigators of Microbes

By Bernard Dixon

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*Animalcules* is a compilation of essays by Bernard Dixon that have appeared in the American Society for Microbiology journal *Microbes*. As a result, one can read this

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