Reviews and Resources

BOOK

The New Plagues—Pandemics and Poverty In a Globalized World

This short paperback appears to be an introduction to infectious diseases for the layman. It is part of the initiative “Encouraging Sustainability” and hopes to “enable as many people as possible to form their own opinions about the globalization of infectious diseases in the modern, networked world.”

Many universities are now requiring incoming freshmen to read challenging and thought-provoking texts. This book well fits that description and certainly deserves to be considered for such programs.

The chapters are brief but concise. They begin with “The Invaders” and “The Defenders,” briefly introducing the reader to disease-producing organisms and then discussing immune responses. A somewhat longer chapter considers the “Coexistence of Mankind and Microbe.” The author notes that human development, including changes in nutrition and adaptation away from nomadic life, as well as animal husbandry, led to the onset of epidemics. The chapter also discusses microbial strategies, coexistence and symbiosis, and the role of viral carcinogens, such as Helicobacter, human papillomavirus, and the hepatitis B and C viruses. Many diseases must be considered as multidimensional systems, i.e., interaction with environmental and genetic factors, rather than assuming that a pathogen causes disease simply by direct action.

The major chapter in the book, “More Than a Body Count: the Major Infectious Diseases,” takes up almost 100 of the less than 300 pages of text. It begins with an overview of respiratory, diarrheal, and food-induced diseases, continues with the so-called “children’s diseases” and problems with immunization, and then discusses AIDS. The present worldwide situation regarding this disease is elucidated, and the societal factors involved (“A virus by itself does not make an illness”) are considered. Suggestions for interruption of spread, including potential vaccines, as well as the drawbacks associated with cost for so doing, are discussed.

The chapter continues with an overview of the tuberculosis problem, focusing on South Africa and Russia, and noting that complacency has been our worst enemy. Almost 345 times as much money was spent to fight HIV infection by the World Bank in 2005 and almost 50 times as much was focused on malaria programs in Africa. Compounding the problem is the fact that 15 million people are concurrently infected with AIDS. Of course, HIV infection compounds another problem, i.e., immunization of immunocompromised children—another example of “interaction.”

A brief section on malaria (and the DDT controversy) leads the reader to a discussion of influenza from a historical as well as a microbial viewpoint. Avian influenza (specifically H5N1) is discussed at length. Unfortunately, at the time of publication, the author did not foresee the recent outbreak of swine flu. A brief description of SARS is followed by a short section on tropical diseases. I would refer the reader to Peter Hotez’s Forgotten People, Forgotten Diseases for a true evaluation of how unaware the Western world is of these scourges of the developing world.

Two short chapters deal with antimicrobials and immunization. The latter emphasizes modes of action, resistance, nosocomial infections, and the problems associated with the addition of antibiotics to animal feed. Insofar as vaccines are concerned, the author admits that none of them are perfect but that they save five million lives each year. When the diseases against which they protect have been eradicated, he says, then we will be able to consider suspending immunization programs.

A chapter entitled “Poverty and Infectious Diseases from a Global Point of View” emphasizes organizations and goals. In the present worldwide economic climate it seems that nongovernmental foundations and organizations may prove more effective than vague promises from highly publicized summit meetings.

In “Swimming against the Tide” we learn, not surprisingly, that pharmaceutical research emphasizes development of drugs that will sell well in developed countries, with only 10% targeted towards diseases in developing countries, where 90% of the global disease burden is concentrated. Blockbuster drugs are what ensure economic viability for the pharmaceutical companies.

What are the hot spots for old and new epidemics? The poor and the sick, catastrophes and conflicts, transmission from research laboratories, climate change with its associated localized increase in vectors as a result of higher temperatures, excursions into the wilderness (logging and exportation of exotic animals, e.g. Ebola, Marburg disease and other illnesses), animal farms as breeding grounds for disease through crowding, improper use of antibiotics, the leap of animal diseases to other species (e.g. BSE, SARS and bird flu). Kaufman sees human-animal interaction as the grassest threat of a new pandemic.

In the book’s conclusion, entitled “Five To or Five Past Twelve,” the author suggests a 10-point program for the control of infectious diseases. Some of them, such as making intensive use of available intervention measures, seem a little more doable than combating poverty. Many of them bring to my mind my father’s words, “Whatever you do, you have to remain an optimist.” We have made great strides. The author tells us that we have to finish the job, or at least attempt to do that.

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