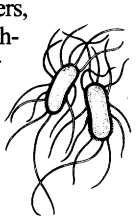
BOOKS: PUBLIC HEALTH

Fine Battlefield Reporting, But It's Time to Stop the War Metaphor

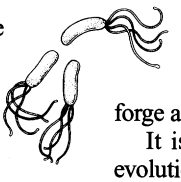
Tony McMichael

Secret Agents
The Menace of Emerging Infections
by Madeline Drexler
Joseph Henry (National Academy), Washington, DC, 2002. 326 pp. $24.95, C$34.95. ISBN 0-309-07638-2.

Madeline Drexler's *Secret Agents* has a familiar lineage. It continues the story of emerging diseases that Laurie Garrett highlighted in the 1990s with *The Coming Plague* and that runs through Richard Preston's *The Hot Zone* and *Virus Hunter* by C. J. Peters and Mark Olshaker (*1*). The style of this journalistic genre is racy and a little breathless. Militaristic metaphors abound: we are under siege from microbes, germs invade our bodies, we counterattack with antibiotics. A quick perusal of the bibliography of Drexler's book reveals titles such as *Plague Wars*, *Deadly Feasts*, *Living Terrors*, and *The Biology of Doom* (*2*). These are works by American authors, written for a public having a horrified fascination with the prospect of unexpected outbreaks of deadly diseases. The dissonance for suburbanites is clear. In our modern societies, we Westerners inhabit hygienic homes, eat pressure-packed sterile foods, are protected by a plethora of early-life vaccinations, and have powerful antibiotics at the ready. Germ-free Nirvana seems surely near. However, our recent experiences—with novel threats including Legionnaire's disease, HIV, Ebola virus, mad cow disease, and West Nile fever as well as resurgent enemies such as tuberculosis, cholera, and, pressing at the borders, dengue and malaria—indicate otherwise. Indeed, just in time for this book, anthrax spores were delivered in the daily mail.



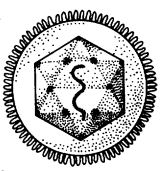
Drexler, a veteran science and medical journalist, tells a lively and well-researched story. The title is just one indication that her book belongs to the genre discussed above. Microbes are described as "secret agents" that "menace" us. Particular topics are covered in chapter with titles such as "Winged Victories," "Food Fright," "Superbugs," "Infection Unmasked," and "Bioterror." The publisher's description on the dust-jacket flap reinforces this flavor: "The most ceaselessly creative bioterrorist is still Mother Nature. And her microbial operatives are still around us, thriving in the shadows, ready to pounce when conditions are right....*Secret Agents* reveals just what we're up against in humankind's perpetual war with germs."



The cover photograph shows, apparently, a dead crow on the sidewalks of New York. The bird represents the early, baffling casualties of an infectious disease that turned out to be due to the West Nile virus. A mosquito-borne infection of humans in the Middle East and Africa had unexpectedly breached America's broad trans-Atlantic defenses. Drexler describes the reaction of Rob Lanciotti, of the Centers for Disease Control (CDC), to the surprise discovery of this new immigrant: "A bolt of heat shot through Lanciotti's body. His heartbeat sped up and he became drenched with sweat." And she records the equally vivid verbal response of Duane Gubler, CDC's head of vector-borne infectious diseases: "Holy shit," he exclaimed.

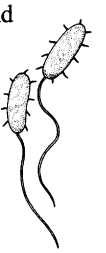
Secret Agents is, however, much more than a market-attuned contemporary thriller. Drexler provides a well-organized and detailed account of several major outbreaks of infectious diseases (predominantly in the United States) and the issues associated with them. The topic is important because it is clear that infectious disease agents are emerging, resurging, and spreading more freely in the modern world. Human mobility and long-distance trade have increased; cities have become highways for microbial traffic; poverty perpetuates vulnerability to disease; and sexual practices, drug injecting, intensified food production, along with much modern medical technology all create new opportunities for microbial opportunism. The author tells us about the recent incursions of leptospirosis, listeriosis, *Escherichia coli* O157:H7, and other food-poisoning outbreaks. Drexler discusses the potential impacts of climate change on infectious diseases, and she recounts the alarming rise of antibiotic resistance following decades of ill-considered overuse of these wonder-drugs.

The book's later chapters are more integrative. In "Infection Unmasked," Drexler explores the fluctuating fortunes of the germ theory over the past 150 years, and her review of recent research implicating infectious agents in a range of erstwhile non-infectious diseases—such as heart disease, schizophrenia, multiple sclerosis, and Type I diabetes—is instructive. In the final chapter, Drexler argues that several recent and unusual experiences with combating infections at the global level (including smallpox eradication, the emergence and dissemination of AIDS, and the worldwide resurgence of tuberculosis, malaria, and cholera) have helped forge a better-connected world community.



It is clear that Drexler appreciates the evolutionary and historical depth of this story of the relationship between microbes and humans. She refers to earlier scholarly accounts given by writers such as Aidan Cockburn, William H. McNeill, Frank Fenner, and Paul Ewald (*3*), each of which emphasizes the ecological imperatives that microbes, like all other species, display. Through the unplanned hit-or-miss processes of biological evolution, microbes often take advantage of changes in human ecology: meat-eating, livestock herding, urban living, storing of food, transfusing of blood, and so on.

Therefore, it is unfortunate that *Secret Agents* relies on the images of warfare, launch pads, deadly agents, and "the microbial underworld." This perspective implies malign microbial intent. But it is inappropriate; Mother Nature does not deliberately brew bioweapons. Rather, we humans are only one species among countless millions on Earth, and most of those millions are microbes. As Drexler reminds us, 90% of the cells "in" our body are bacteria, many of which pay for their board by rendering useful biological support services. Without microbes, we could not ferment the fibrous component of our morning muesli, and cows could not eat grass, and termites could not chew wood. If we are to achieve a new equilibrium with an increasingly globalized microbial world, then we must think in terms of ecological balance, not ambush and arms race.



The author is at the Centre for Epidemiology and Population Health, Australian National University, Canberra ACT 0200, Australia. E-mail: tony.mcmichael@anu.edu.au

CREDIT: KATHRYN BORN/FROM *SECRET AGENTS*

References
1. L. Garrett, *The Coming Plague* (Farrar, Straus and Giroux, New York, 1994); R. Preston, *The Hot Zone* (Random House, New York, 1994); C. J. Peters, M. Olshaker, *Virus Hunter* (Anchor, New York, 1997).
2. T. Mangold, J. Goldberg, *Plague Wars* (St. Martin's, New York, 2000); R. Rhodes, *Deadly Feasts* (Simon and Schuster, New York, 1997); M. T. Osterholm, J. Schwartz, *Living Terrors* (Delacorte, New York, 2000); E. Regis, *The Biology of Doom* (Henry Holt, New York, 1999).
3. A. Cockburn, *The Evolution and Eradication of Infectious Diseases* (Johns Hopkins Press, Baltimore, MD, 1963); W. H. McNeill, *Plagues and Peoples* (Anchor, New York, 1976); F. Fenner, *Smallpox and Its Eradication* (World Health Organization, Geneva, 1988); P. Ewald, *Evolution of Infectious Disease* (Oxford Univ. Press, Oxford, 1994).