



A Look at Books

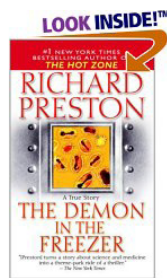
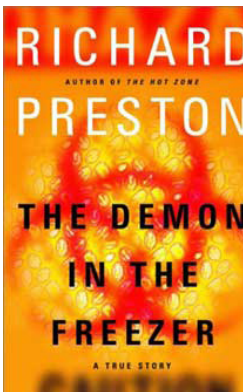
By Barry A. Schlech



This is a new section of the SPECTRUM. We hope you find it interesting and informative. We will review one or more books that are of general R&D interest. Being a microbiologist and historian myself, there may be a professional bias towards books that have a microbial or historical aspect, but bear with me and see.



THIS ISSUE'S SELECTION



The Demon in the Freezer

by Richard Preston

By the title of Preston's book, I thought it might be a treatise on the number and kinds of microbial cultures growing on my cottage cheese or left-overs in my freezer. But alas...it is a more important non-fiction story about a horrendous disease and its potential for use by bioterrorists.

Mr. Preston's book is a riveting narrative that tells the story of the 2001 anthrax letter attacks and describes the potential threat and likely consequences of smallpox being used as a biological weapon. The book is not comforting. Anthrax is caused by the bacterium, *Bacillus anthracis*, and requires direct exposure to the microbe to produce illness. It killed five people in the recent letter outbreak, but is comparatively benign. By contrast, the smallpox virus floats through the air from victim to victim and travels like lightning transforming a small outbreak into a major epidemic. Preston writes "It quickly gives way to branching chains of explosive transmission of a lethal virus in a virgin population of non-immune hosts. It is a biological chain reaction." Smallpox is the demon in the freezer. Although the disease was officially eradicated from the planet in 1980, there are stocks of the virus at the CDC in Atlanta and at a former germ-warfare facility [i.e., Vector] in Novosibirsk, Siberia. During the 1980s, Russian scientists had produced the virus by the ton, loaded them into missile warheads and aimed them at the United States. These missile warheads were supposedly destroyed in the 1990s, but Preston suggests that some reserves managed to escape destruction and are now being harbored by rogue states. The current smallpox vaccine is medically imperfect and is known to produce adverse effects in a small percentage of recipients. The growing number of non-immunized or unprotected citizens increases our vulnerability as a nation to an attack by terrorists using the smallpox virus.

Smallpox is an acute contagious disease caused by the variola virus. It originated over 3,000 years ago in India or Egypt and is one of the most devastating diseases known to humanity. Repeated epidemics swept across continents for hundreds of years, killing millions of people. It caused a horrible, painful death. Every fourth victim died, a third of the survivors went blind and all were scarred. Smallpox had no cure and it knew no class boundaries. The disease has been called "The most terrible of all the ministers of death". It killed six reigning monarchs of Europe.

Royalty Who Succumbed to Smallpox:



King Luis I of Spain
d. 1724



Emperor Joseph I of Austria
d. 1711



King Louis XV of France
d. 1774



Queen Mary II of England
d. 1694



Queen Ulrika Elenora of
Sweden
d. 1741



Tsar Peter II of Russia
d. 1730
[on his wedding day] --Now
that's a bad hair day!

Demon in the Freezer does not review this history, but tells the true story of two doctors and an infectious disease expert who attempt to find the persons responsible for the 2001 anthrax attacks in the United States. Knowing the dangers of bioterrorism, the three also work to prevent the release of the most dangerous of all biological weapons---smallpox. Let us hope that we can still contain this horrible demon.