

How not to educate science teachers

by Warren J. Hamerman

The History of Modern Science: A Guide to the Second Scientific Revolution, 1800-1950

by Stephen G. Brush

Iowa State University Press, Ames, 1988

560 pages, \$39.95

Imagine if an official of America's most prestigious association of music were to write a "teachers' guide" on the history of music for the purpose of defining all music education for the next 20 years or so, and the author:

- briefly mentioned Beethoven as a man who experimented with many different music forms—sonatas, symphonies, concertos, quartets, and so forth—but didn't manage to make a commercial success out of any of them;
- left Mozart out of the guide altogether;
- devoted significant commentary to Henry Kissinger because he attended many White House concerts and was an honorary member of the board of the New Jersey Ballet;
- extensively reviewed the contributions of the Beatles, Elvis Presley, and Jack Benny's violin playing, while minimizing the contributions of Schubert and Bach.

This authoritative book on the history of modern science purports to give an overview of scientific developments in physics, biology, chemistry, mathematics, etc., over the past 150 years. Yet, it unfortunately manages to:

- give honorable mention to the great mathematician Karl Gauss as an eminent scientist who speculated and experimented on the electric telegraph along with others but "didn't quite manage to make a commercially successful invention out of it";
- omits Louis Pasteur entirely;
- devotes an entire chapter to the "science" of race theory, eugenics, social darwinism and anthropological relativism;
- presents two chapters of material on psychoanalysis and behaviorism.

The areas of scientific endeavor in physics, astronomy, and electromagnetism are well presented, which makes one wonder all the more about the overall biases built in to the basic illiteracy in the history of science which permeates our culture.

The SDI: They got it

by Carol White

The Cardinal of the Kremlin

by Tom Clancy

New York, G.P. Putnam's Sons, 1988

543 pages, \$19.95

I am a sucker for a good spy story any day, so I guess I was the first person at my library branch to get this new Clancy thriller. As far as the plot line goes, you will probably enjoy it more if this is the first of his books which you have read—since his cowboys-and-Indians theme wears a bit thin with repetition. But that's okay really, because the fun side of the plot is the SDI story after all.

Like Clancy's first in the series, *Red October*, *The Cardinal* is brim-full of realistic detail about laser defense weapons. There is a nifty, brush-stroke description of how adaptive optics in lasers work—the problems of focusing, target acquisition, power deposition, computer codes. There is also a neat indication of what the free electron laser is all about.

The book also has a nice peek at how Afghan guerrillas used the smart heat-seeking Stingers to devastating effect against Soviet helicopters and planes. Best of all, Clancy admits that not only are the Soviets developing their own Strategic Defense Initiative, and putting more manpower and resources into their program, but he shows that the Soviets are significantly ahead of the United States in developing powerful lasers which can take out satellites at will.

The word has been gotten out to the *cognoscenti* that Clancy is being aided in writing his military *romans à clef*. I believe it. The sad thing is that the book is full of precisely the same illusions about Soviet policy which have governed administration policy through a series of disastrous summit meetings between President Reagan and Soviet chief Gorbachov.

The theme of the book is how the Americans must aid the liberalizing Soviet party chief, to defeat the hardliners in the Politburo who would otherwise defeat his policies. Perhaps the most annoying aspect of the book is the smug assurance of the plot that the U.S. government has the Soviet High Command penetrated to the point that it is we who are successfully manipulating them at every turn. Would that it were so; unfortunately, the reverse is far too often the case.