

Anti-nuclear blasts

Readers of PHYSICS TODAY are entitled to better-informed reviews than the one by Gordon Adams of the *Cult of the Atom*, *Nukespeak* and *The Nuclear Barons* (June, page 69). According to Adams, these books represent "alternate sources of information that can survive tests of scientific accuracy and objective judgment." Having reviewed Daniel Ford's *The Cult of the Atom* (*Nature* 302, 89 [1983]), I would assert that at least this book cannot "survive the tests of scientific accuracy and objective judgment."

As an example, consider Ford's attack on the Rasmussen study on reactor safety, which Adams quotes approvingly. Despite these attacks, the study has held up fairly well. Indeed, the Risk Assessment Review Group chaired by H. W. Lewis, which subjected the Rasmussen Study to a particularly stringent critical examination, found the study to be a "... conscientious and honest effort to apply the methods of fault tree/event tree analysis to an extremely complex system." To be sure, the study was a pioneering step, and it "leaves much to be desired." Rasmussen, in his paper given at the New York Academy of Sciences in 1981, shows that even the Three Mile Island incident occurred at a time not inconsistent with the estimates contained in his study. Is there any basis then for impugning Rasmussen's integrity, an accusation by Ford with which Adams all but concurs? Certainly not; and I must protest this unfair and unjustified *ad hominem* attack on a fellow member of the American Physical Society in the pages of PHYSICS TODAY.

Since my ideas for a nuclear cadre were thrown back at me by Adams, I should explain again what I had in mind when I proposed establishment of such a cadre. Nuclear power will always require a high order of expertise if it is to be handled safely: in this respect it is little different from other technologies such as air transport or even dams and dikes. This expertise will be required for a very long time; even if we turn away from nuclear power, we shall have to keep some

surveillance over the wastes. My nuclear cadre would consist of experts who maintain the technical tradition and set the standards for the prudent conduct of the nuclear enterprise. I see no reason why such a cadre would be any less subject to democratic control than are the cadres of commercial airline pilots, of managers of large hydroelectric dams, or of the dike-keepers in Holland.

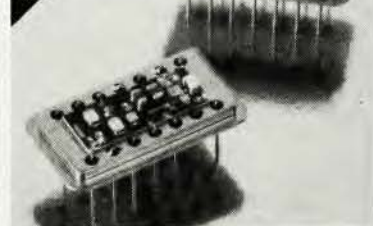
Finally, let me quote from my *Nature* review:

One of Daniel Ford's themes is that good men were so blinded by visions of a golden age based on their technology, their transuranic elements, as to ignore the faults of their technology. In short, that overweening ambition and misguided enthusiasm have led to actions that, in his view, have been profoundly irresponsible. But Daniel Ford, as well as his colleagues in the anti-nuclear movement, bear an equally heavy weight of responsibility. To be sure, he is moderate in his actual recommendations—upgrading the safety of existing plants, curtailing the operation of some of them located in heavily populated areas, and generally stepping backwards. But in presenting an indictment that is so one-sided, he adds powerful impetus to the popular and political forces that have already halted nuclear energy in several Western countries. Is he, as well as *The New Yorker* magazine, which first published *The Cult of the Atom*, prepared to accept the full consequences of a rejection of nuclear energy?

The anti-nuclear community, as exemplified by Daniel Ford, has not discovered a practical alternative to nuclear energy. Unless such an alternative is found, I believe future generations will regard the nuclear establishment as having acted more responsibly than those who would find their fulfillment in the elimination of our only practical, inexhaustible energy source.

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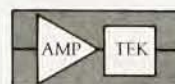
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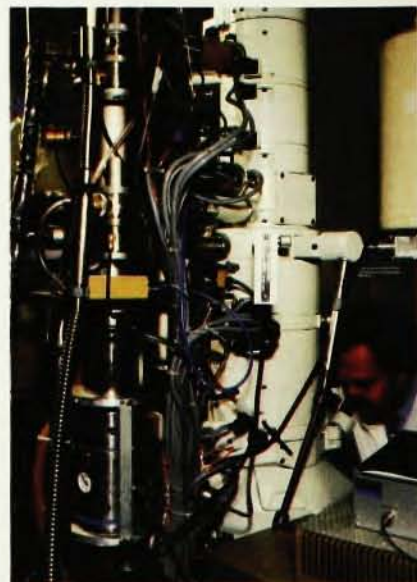
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letters

I do not say that **PHYSICS TODAY** shares any responsibility for a rejection of nuclear energy (especially since **PHYSICS TODAY** has been generous in allowing me to present my views in its columns). I do think that a magazine for physicists and by physicists could have done better in reviewing these strongly anti-nuclear books.

ALVIN M. WEINBERG

Director

Institute for Energy Analysis

6/84

The lead book review in June marks a despicable departure from what I view as the function of a book section in a journal sponsored by a professional scientific society. It is written by a very political non-scientist, reviewing three books attacking scientists, each authored by politically active non-scientists. The review is extremely supportive of these attacks, and introduces not a shred of evidence of objectivity in expressing this support. It lumps nuclear power and nuclear weapons together as a single evil entity, and maligns the former with an intensity unusual even for anti-nuclear activist organizations.

The only information in it definite enough for a scientist to evaluate is *wrong*. It states "Mancuso's refusal to cover up the risks of radiation led to AEC termination of funds for his work." Actually it was only after he received his termination notice that Mancuso began the analysis, with new collaborators, that led to his higher risk estimates. That work has received well over 20 scientific critiques, including some by long-time collaborators on the project, and it has been rejected by all national and international scientific groups charged with responsibility in radiation health. The withdrawal of his support was investigated by a congressional committee and by the General Accounting Office, and they found it to be justified.

Everything else in the review is political demagoguery without even an ounce of moderation. How can the community of physicists tolerate such trash in their journal?

BERNARD L. COHEN

University of Pittsburgh

6/84

Hospitality Abroad

You recently published a letter (January 1984, page 109) from two disgruntled American scientists who were unhappy with their conditions of employment at a prominent foreign institution. They stated that your practice of publicizing such complaints "render[ed] a great service to the scien-

tific community." I disagree.

The Societies of the American Institute of Physics have many foreign members; each is part of the scientific community. The printing of letters that find fault with foreign institutions is inequitable when you have not published letters critical of US laboratories; yet there are scientists in this country—academic, governmental, and industrial—who also believe that their employment conditions or professional opportunities were not what was promised or that promotion experience was less than had been assured. Do you have an announced policy regarding your basis for selecting and publishing letters that are critical of institutions?

I believe that publication of such critical letters is problematic. The negative impression produced by the opinions, justified or not, of complainers cannot be overcome by appending a defensive reply. There may be a need for a general forum for employment complaints of all types, but the pages of **PHYSICS TODAY** are inadequate—if you permit complete and open discussion—and inappropriate.

PETER L. SMITH

Center for Astrophysics

Cambridge, Massachusetts

2/84

Laser cooling

My article, "Laser cooling of atomic beams" for *Physics News* in 1983, which was reprinted in **PHYSICS TODAY** (January 1984, page S-26), had an unfortunate omission. In discussing the history of laser cooling I mentioned the 1975 proposal¹ of Hänsch and Schawlow for cooling a gas of atoms, but neglected to include the independent and nearly simultaneous proposal² of Wineland and Dehmelt for cooling trapped ions. Their ideas led, in 1978, to the first observation³ of laser cooling of trapped ions. I regret any confusion or misunderstanding that may have resulted from this omission.

References

1. T. W. Hänsch, A. L. Schawlow, *Opt. Commun.* **13**, 68 (1975).
2. D. J. Wineland, H. Dehmelt, *Bull. Am. Phys. Soc.* **20**, 637 (1975).
3. D. J. Wineland, R. E. Drullinger, F. L. Walls, *Phys. Rev. Lett.* **40**, 1639 (1978); W. Neuhauser, M. Hohenstatt, P. Toschek, H. Dehmelt, *Phys. Rev. Lett.* **41**, 233 (1978).

WILLIAM D. PHILLIPS

National Bureau of Standards,

Washington, D.C.

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At the risk of being labeled as a "Marshak ally," the letter by S. N.



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