My experience with this program began in 1958 and terminated in 1961, as Wade states. The program was initiated in 1956, under the direction of Commander William Behrens, at New London, Connecticut. The nuclear physics curriculum, which I taught primarily, was developed at New London by Austin Frye, who had been chairman of the physics department at the U.S. Navy Postgraduate School, and was extended by others, including myself. While the New London program was based upon previous experience in training in nuclear technology at the Bureau of Ships and at the prototype sites near Pittsburgh and Schenectady, it was not, specifically, the program that Carter attended. The mode of operation in the early days of the nuclear program is, however, well documented (*1*). My remarks should at most be construed as generic comments on the nature of that program and reflect no direct evaluation of Carter's credentials.

Further, Wade follows a statement describing enthusiasm for Carter in the scientific and technical community with a correctly stated quote from me that "it would be unusual to see a president who knows a Bessel function from a Fourier series." My statement was intended to be factual only. It would be quite inappropriate for a public servant such as myself to voice preferences in the presidential contest; such preferences were neither expressed nor implied in my conversation with Wade.

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**References**

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## The Science Court

Philip Boffey's excellent article on the science court (News and Comment, 9 July, p. 129) reports that the "only outright opposition to emerge from the scientific community thus far has been voiced by leaders of the Scientists Institute for Public Information."

At the American Physical Society (APS) Washington meeting last April, the Forum on Physics and Society organized a public session on the science court. Among the panelists was Arthur Kantrowitz, principal advocate of the court. I think it is fair to say that most of the audience came to the session interested in the idea, or at least neutral, and ended up leary of it. It struck me, at least, as an attempt to institute a Plato's Republic of scientists. Not since the time of the trial of Galileo have we had a canon court issuing pronouncements of scientific Truth. At the conclusion of the APS forum session the audience (and the panelists) by a show of hands resolved overwhelmingly that "before an experiment on the Science Court be conducted, much further discussion is needed, not merely among scientists, but in the American community at large, which will be powerfully affected by the conclusions reached in any Science Court." The Forum on Physics and Society is now endeavoring to stimulate its 2000 members to think about the issue and hopes to encourage the broad public discussion which has so far been lacking.

There are important differences between the plan now being considered by the Consumer Product Safety Commission and the general proposals of Kantrowitz and the White House advisory group on science and technology. Commissioner Lawrence Kushner, who spoke at the forum session, views the court as a kind of Robert's Rules for scientific controversy, a way of forcing opposing sides to confront each other's facts and arguments. The court would have no life of its own. From time to time a court would be impaneled by the Commission and dissolved upon the issuance of a report to the Commission.

The more ambitious plans of Kantrowitz and the White House group seem to me both simplistic and dangerous. Implicit in the argument for a science court is the assumption that value-free questions of fact can be separated from political questions of policy. The science court, it is argued, will resolve controversies as to the facts. But which facts? The answers you get depend upon the questions you ask. In those recent matters of public controversy with a heavy technological component—the ABM, the SST, the B1 bomber, reactor safety—the two sides have been stressing different questions. What the important questions are is a political judgment.

Furthermore, since the answers to whatever questions one considers important are not known, but can only be estimated, the two sides quite properly assign different weights. Judgments on the complex questions of public policy rest not upon one fact, or one lemma, but on a rich foliage of argument, each branch of which is reached only after logical branching at previous stages in the argument. Assigning different probabilistic estimates of "the truth" at each

step can lead to qualitatively different conclusions (*1*). In social policy questions it is impossible to separate facts from values. A democratic consensus can be achieved only by a democratic process, even with respect to scientific "facts," when those facts have heavy political import. No elite group—the National Academy of Sciences, Nobel laureates, or anyone else—can decide for the U.S. public what are the right questions and the right answers.

The science court will stifle public debate. It will encourage the public to believe that objective answers have been measured incontrovertibly in the laboratory. This select court will select the issues, select the judges, select the questions, select the protagonists, and give its imprimatur to its answers. Perhaps the science court will establish once and for all that the sun revolves around the earth.

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**Notes**

1. As a simple linear illustration, suppose there are six steps in an argument and at each step the spread in estimates is from 0.75 to 0.95, which is maybe as close to agreement as one is likely to come in a real controversy. Whereas $(0.95)^6 \cong 0.66$, $(0.75)^6 \cong 0.1$, a two-thirds probability in one case and a mere 10 percent chance in the other.

## Clean Air Litigation

In his article on the social impact of pollution control (14 May, p. 631), Wallace Johnson makes a critical factual error. In the current round of litigation of the Environmental Protection Agency's (EPA's) regulations on the preservation of air quality in clean air regions, New Mexico (and a number of other clean air states which have joined in its brief) is not siding against the Sierra Club, but with it—against EPA and major polluters. New Mexico and the Sierra Club share a common perspective that strong and effective national regulation on the preservation of air quality is the only way to protect clean air states against threats by industry that they will go elsewhere if tough air quality standards are enforced. Also, the notion represented in Wallace's subhead that we are talking about "Cleaner than clean air" is misleading; the national ambient air quality standards do not represent "clean air"; they represent air quality just clean enough that damaging health and property consequences have not yet been demonstrated. Even the toughest of the proposed significant deterioration classifications,