

public policy in *PHYSICS TODAY* on two grounds. One is that physicists as a corporate unit are entitled to a medium which expresses their opinion. The other is a more ambitious claim that there are issues on which physicists have special competence and on which therefore their voice must be heard.

As to the first point, I do not favor it because it is a step toward a corporate state. The pressure groups which exist in our country have not been, in my opinion, a beneficial addition to our democratic institutions. To the extent that I do not agree with existent pressure groups, I would rather strengthen the basic democratic functions and criticize the pressure groups which do exist. I would refrain from any step that tends to create an additional group.

As to the second point, it is a widely accepted thesis among physicists that they know best and should be consulted on every occasion. I heard an outstanding physicist claim that where a question of "megadeaths" is discussed, only a physicist is capable to judge. Of course, this exaggerated claim is ridiculous, but milder claims of the same kind are widespread. I wonder how advocates of this point of view would react to a statement that generals should make the decisions on peace and war because they know most about the subject and are most competent to judge. Our public philosophy is based on a proper division of authority, and I believe that public issues should be decided through the traditional channels. Although these have many faults, at least we know these faults and have learned to live with them.

I believe there is a possible exception that should be made to the exclusion of public issues from *PHYSICS TODAY*. If there occurs a question of fact (rather than of opinion) on which all reputable physicists agree on a professional basis and concerning which there is a public misunderstanding, then such a fact could well be spelled out in *PHYSICS TODAY*. As an example, I might mention the outrageous statement made by Senator Estes Kefauver in 1956 that nuclear explosions might change the axis of the

earth rotation by 27 degrees. The statement of Kefauver was of course not taken seriously; but, should a statement similarly outrageous, but for some reason more acceptable to the public, become a point that many people believe, I think there is no harm but rather some real advantage if proper clarification is given in *PHYSICS TODAY*. I realize, of course, that such clarification might be helpful or harmful to any one of the political parties or political trends, since lack of information is by no means the monopoly of any group of people. Perhaps the strongest point in favor of *PHYSICS TODAY* limiting itself to physics and physicists is the consideration that, by entering into a political argument, our ignorance in politics may show up in a similar way in which the ignorance of politicians sometimes becomes apparent.

EDWARD TELLER

Lawrence Radiation Laboratory

Voluntary association

Regarding the amendment on public issues: APS is a voluntary association of physicists and, as such, the members sanction the actions of the society. This is proper for issues dealing with physics where it is not a matter of opinion. Such is not the case for public issues. The views of a man of independence are not dictated by majority vote. In the event of a clash, his only possible action would be resignation from the society. The adoption of this amendment would place non-professional restrictions on membership. Keep APS concerned with physics. The interested may join other organizations whose proper concern deals with public issues.

LESTER L. DERAAD JR
Harvard University

Semantics and substance

The proposed amendment to the APS constitution should be defeated not necessarily because of its merit but because its wording is very vague and ambiguous. Presumably the crux of the present discussion is to define what is and what is not "a matter of concern to the society," and this is left undefined in the amendment. Passing it in its present form would open the

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door to discussion within APS of any issue under the sun, a discussion that would be hopelessly divided between the merits of the particular issue and the appropriateness of the issue as a matter of concern to APS.

Speaking of the substance of the amendment, I would be in favor of a change that would allow a discussion within APS of issues directly pertaining to the work of its members as scientists. Such issues would include topics like scientific priorities, scientific aspects of foreign aid, the impact and the connection of science with governmental agencies such as the Department of Commerce, Department of State, Department of Housing, etc., the allocation of national resources for scientific research, the social structure of scientists themselves, and many others. I feel that these are issues that at least partially match the special competence

we are supposed to have; therefore their consideration would be a significant contribution to ourselves and to society as a whole.

I would be very much opposed to allowing APS to discuss general public issues. Each of us, as an individual, has innumerable outlets for such activity, including some organizations especially geared to scientists. Dragging APS into this would be quite superfluous. In addition, I am also very sensitive to any trend that might result in public statements by APS on issues in which we have no special competence. Such statements would necessarily carry in the public mind a false tinge of importance and authenticity just because they are utterances by scientists who, according to the contemporary myth, have at least the key to the solution of all problems by their "objective," "scientific" method.

MICHAEL J. MORAVCSIK
University of Oregon

Subcritical and no joke

The "Search and Discovery" department in the September issue struck a jarring note with the comment, "With a little effort you can become the only kid on your block," using a "Smallest Nuclear Reactor." The essential point in the associated work was exactly the opposite. Presuming complete ignorance of criticality safety work, it is still impossible to make less than about 1 kg of U^{235} supercritical unless you work with water solutions in a large volume of a good moderator such as beryllium, graphite, or heavy water. Using much less than 1 kg, for example, the 242 grams quoted, you are completely safe from a nuclear transient in any geometry—and that is very nice to know. There has been such a great deal of nonsense connected with the possibility of a nuclear reactor exploding that I noted the editor's tacit agreement with much regret.

CARROLL B. MILLS
Los Alamos Scientific Laboratory

Environment and medicine

I would like to congratulate *PHYSICS TODAY* and Albert Crewe for the excellent article "Science and the War on . . ." (*PHYSICS TODAY*, October, page 25). It is encouraging to see a person

of Crewe's stature calling us to task. The complexities of the problem of uncluttering our environment are enormous and will require the concerted effort of all professionals, as professionals.

We at the American Medical Association are focusing in on the medical aspects of environmental pollutions and how the medical profession can attack the problem. Only by the combined efforts of professionals from various disciplines do we have a chance of cleaning up our environmental septic tank.

GORDON R. ENGBRETSON
Department of Environmental Health
American Medical Association

In support of applied research

Problems of the types described in Albert V. Crewe's article (*PHYSICS TODAY*, October, page 25) exist in an atmosphere of social, economic and political pressure. Such an atmosphere is not conducive to free investigation and, consequently, is shunned by scientists as investigators. The result is often a general disdain by scientists for applied research. Applied research is viewed as being subject to corporate and government pressure and tackled with shoddy thinking.



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