

Letters to the editor

Physicists and Politics

AMERICAN PHYSICISTS have been rather proud of their contribution to the winning of World War II. Teamed up with chemists, engineers, and others of the scientific fraternity we did an outstanding job.

We can also look back with some pride to the contribution made by physicists to the intelligent handling of postwar political problems. Physicists knew that the basic physical principle of the atomic bomb was no secret. They could foresee the dangers of an overvaluation of the secret techniques used in its manufacture. They realized more fully than most of their fellow citizens the terrible danger of a third world war to be fought with atomic and bacteriological weapons. They appreciated, too, the extreme importance of scientific potential as well as industrial potential for the national safety. Many were in bad conscience about their responsibility for the bomb. All were worried over the extension of wartime rules of secrecy into the indefinite future. It was natural that physicists and other scientists connected with the Manhattan District should feel an unwonted interest in many questions of public policy and a new sense of social responsibility.

The banding together of scientists in many centers, the formation of the Federation of American Scientists, the creation of the *Bulletin of the Atomic Scientists*, the public meetings and the campaign to educate Congress—all these are a part of a history in which we can take satisfaction. True, we were unsuccessful in our main objective—the adoption of a workable plan for the international control of atomic energy. Nevertheless, we had our partial successes. It was largely due to the political activity of the Federation that the McMahon Act was passed instead of the May-Johnson bill, that the Lillienthal Committee was able to bring out its sane, but ill-fated plan, that problems of loyalty and secrecy were not more seriously mishandled.

But times have changed. The initial fluid period of postwar adjustment has passed and the nation is committed to the Cold War. As the political situation has hardened, scientific influence has declined. The prestige of physicists has been hurt by growing resentment against them for their part in adding to the horrors of war, and by suspicion of their loyalty fed by the May and Fuchs cases. Local chapters of the Federation of American Scientists have disbanded. For some time

the *Bulletin* and the national organization of the Federation have been in continual financial hot water.

Our waning interest is natural and to a certain extent inevitable. There are other things to do and it requires a special type of civic conscience to take time out for an activity that produces few visible effects.

But does all this mean that the need for the *Bulletin* and the Federation is over? Can we afford to discard the machinery of information, discussion, education, and political activity as the Army discarded equipment in the fall of 1945? Surely not. I submit that so long as the members of our profession have special information bearing on political decisions that affect the national safety and so long as political action from without carries a threat to the legitimate interests of the profession, it is important to maintain both the Federation and the *Bulletin*.

Here "political decision" and "political action" are intended to include policy-making decisions made by the Department of Defense, by the Executive, or by Congress. In this sense the decision of President Truman and the Joint Chiefs of Staff to press the development of hydrogen bombs was a political decision—one with regard to which the judgment of atomic scientists was relevant. The annual budget of the National Science Foundation and the expected revision of the Atomic Energy Act also involve political decisions in which scientists should clearly have a voice. The problem of the declassification of scientific information, the problem of security in the weapons research programs, and the problem of passports and visas for scientific travelers leaving or entering the United States—all these are examples of matters concerning which scientists have an informed and special interest and which are subject to political decision. For a long time to come it will be in the national interest as well as in the interest of science that some such organization as the Federation of American Scientists shall continually scrutinize such problems as these to keep us informed and to see to it on occasion that the views of representative scientists are brought to the attention of our government.

The Astin case has just given us an admirable example of the usefulness of the Washington office of the Federation. That office was alert and prompt to gather the facts after Dr. Astin's arbitrary dismissal. The facts were publicized both through the press and by a barrage of communications to members of the Federation and to prominent scientists whose interest could be expected. The Executive Committee of the Federation issued a statement calling for a full public investigation. There can be little doubt that in this case the Federation, by its prompt distribution of the facts and by its mobilization of scientific opinion, was able to render a distinct public service.

The long-range importance of continued activity by the Federation is accentuated by the recent evidences of an anti-intellectual trend in America and all over the world. In this country the use of misrepresentation and slander as a political weapon is becoming a fine art

that seems all too often to be directed against men of the highest intellectual caliber. An examination of the changing tone of political commentators in the press and over the radio suggests that we may be witnessing a more or less concerted attempt to discredit, or otherwise eliminate, all who oppose the narrow nationalism of the extreme right. Is it too much to say that in addition to the Cold War with the Kremlin we have on our hands a civil war of the mind in which the central issue is whether truth shall be permitted to emerge from a free discussion of evidence or a party line is to be maintained by the suppression of contrary opinion? This is a war for national sanity in which the life of science is at stake—and much more than that. It is a war in which scientists, with their strong bias towards objectivity and their need for freedom, can well play a useful part.

This is a poor time for scientists to lapse into conformism or political indifference. We cannot blame parents and taxpayers for their eagerness to bring the boys home after the surrender of Germany and Japan, or for their impatience with a war that requires us to pay continually in lives and resources merely to maintain a position in the hills of an Asian peninsula. We all tend to be victims of a shortsighted demand for quick, easy solutions of problems that have no such solutions. But

as professional scientists we should have a longer-range point of view: we should be patient enough and adult enough to carry on when the position demands it, whether we win spectacular victories or not. We have convictions. Let us continue to stand up for them.

But in this day of spreading suspicion it is perhaps necessary to face the fact that many scientists have felt it prudent to avoid all political entanglements. Join nothing, sign nothing, and you are pretty sure not to get into bad company! No sensible person will fail to give such considerations their due weight. But if we are so cowed that we cannot ally ourselves in the defense of science and scientific standards of truth, we invite the fate of the German scientists of the 1930's.

The *Bulletin* is ably edited and the Federation, within the limits of slender resources, is doing a fine job. They follow no party line and have a clean record of objectivity. Both need a wider base of support if they are to be continuously representative and secure. If you, Gentle Reader, should send in your dues and subscription, the news will not be telegraphed 'round the world and you are not likely to be rewarded with a Congressional Medal of Honor—but it would be a damned good thing to do just the same.

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Rare Earth Collection

FOR SEVERAL YEARS, the Iowa State College has had a contract with the Atomic Energy Commission to operate one of the Commission's laboratories, known as the Ames Laboratory. One phase of the authorized program (in which I have been very much interested personally) has been the study of the properties of the rare earth salts and metals, and the investigation of their possible uses in the atomic energy program. This program included developing methods for separating rare earths and producing the pure metals. The critical needs of the AEC for these materials for defense purposes have also been met. In preparing these materials for our own use, it has been found possible, with a little extra labor, to purify some additional quantities which we hope to make available for basic scientific research.

It has always been our policy to refer requests for such materials to industry, if it produces them in sufficient purity for the researches suggested. However, when these materials have been unavailable elsewhere, we have tried to supply them for important programs. Since our apparatus and equipment are designed for research purposes, our capacity is limited and the requests to date have far exceeded our supplies. However, recent improvements in our techniques have now made it possible for us to supply larger quantities of rare earths, and the AEC has granted us permission to set up a loan collection from which we will allocate the available material for important basic researches. We

intend to set aside, at this time, at least one kilogram each of La_2O_3 , CeO_2 , Pr_6O_{11} , and Nd_2O_3 . These materials are better than 99.9% of the rare earth oxide indicated and in most cases other rare earths are undetected spectrographically. Some of this material will be put in metal form and, if shape is not important, can be supplied at the present time. We shall also set aside one kilogram each of Sm_2O_3 , Y_2O_3 , Yb_2O_3 , and Er_2O_3 . These materials will come in two grades, both of which will be better than 99.9% except yttrium which will be better than 98%. We expect to have about 100 grams of each of these spectrographically free of other rare earths and with an over-all purity of 99.99%. Small amounts of metallic erbium and yttrium will also be available. While we have produced metallic samarium and ytterbium, it will probably be a year before these metals become generally available. In addition, we are setting aside 100 grams each of Dy_2O_3 , Ho_2O_3 , Tm_2O_3 , and Lu_2O_3 . These materials are of better than 99.9% purity but may contain traces of neighboring rare earth elements. None of these will be available in metal form for some time. Gadolinium, at the moment, is in scarce supply. The demands have been very heavy and it will probably take us from six months to a year to replenish our stocks, but after that time we expect that a kilogram or so of oxide will be available and that the metal will also be available.

Terbium, europium, promethium, and scandium are not available at the present time.