LETTERS

Argonne: Hope for Revitalization

I was director of the Reactor Engineering Division at Argonne National Laboratory during the period when Argonne was perhaps the premier reactor development laboratory in the world. I therefore looked forward to John Walsh's article on Argonne (News and Comment, 22 Oct., p. 354) with considerable anticipation, hoping to read of some signs of revitalization in that program. However, I was disappointed. I am therefore moved to register some emeritus comments on this aspect of Argonne's work.

Two sentences of the article deserve juxtaposition: "Currently more than a third of lab resources go into the effort that emphasizes work on the fast breeder reactor," and "Federal agencies tended to regard the labs simply as contractors obligated to perform necessary R & D." Both statements are clearly true. Placed together, they are instructive as to why the fast breeder reactor program of the United States hasn't progressed very well—and, indeed, why the mission-oriented programs of all the national labs, except the weapons labs, have floundered.

For at least 15 years, the United States has been the victim of overmanaged bureaucracy in the conduct of applied nuclear work. It has been about that long since the Atomic Energy Commission and its successor agencies decided to run the programs with central direction from Washington and partitioned responsibility in the field. A fast breeder reactor program that had been launched at Argonne's initiative in 1948 and had succeeded in producing a reactor (EBR-II) that was the springboard for launching other countries' programs was thereupon broken up, and only fragments returned. The rest of the pieces were assigned to other organizations, and liaison was permitted only at the sufferance of, and direction of, Washington. This situation still prevails.

The result as it concerns Argonne has been large, but unstable, employment of its nuclear engineers and related scientists as tasks are assigned and withdrawn. A very talented pool of people remain, but they are underemployed as far as utilizing their talents for an integrated job of breeder reactor development. Their ability to capitalize on the serendipities that abound from their being associated with basic research scientists in related fields is virtually nil.

When this happens, both the laboratory and the mission suffer. As for Argonne's applied programs, no end of travail is in sight. The current state of our fast breeder reactors, as compared with those in France, tells the story of the mission. In these days of wondering about and searching for ways to move our country back into the forefront of technological production, the ability to use our national labs as prime instruments for progress remains neglected.

I am delighted to hear that Argonne's basic science component is coming out of the doldrums; but it won't be fulfilling its promise as a complete national laboratory until its applied component is given an integrated job to do. However, that can't happen unless the Department of Energy is forced to reestablish its role as moderator and mediator (between scientists and engineers on the one hand, and the instruments of the body politic on the other) and to forgo its current role of manager and director.

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Easing Nuclear Tensions

I commend *Science* for the publication of "Declaration of prevention of nuclear war" (29 Oct., p. 448) and Philip H. Abelson's editorial "Efforts to decrease nuclear tensions" (29 Oct., p. 427).

I am one who firmly believes in a freeze on the production of further nuclear weaponry followed by a programmed decrease in arsenals of these weapons, but only with an acceptable scheme for verification. Although, as Abelson points out, verification may be sticky, I nevertheless believe that it is achievable. An important and perhaps essential catalyst for nuclear dearmament must certainly be widespread "grass-roots" support in both the Soviet Union and the United States.

In the past decade and a half I have visited the Soviet Union eight times, most recently for 2 weeks in October–November 1981 and for 5 weeks in July–August 1982. There is no doubt in my mind that there is now a growing anxiety in the Soviet Union concerning the possibility of nuclear war. This is, in part, a result of constant reminders in the press and on radio and television that Brezhnev has proclaimed that the Soviet Union will not initiate a nuclear war but that no such proclamation has come from the United States. I have found great concern, but no animosity, about

the chill in relations between the Soviet Union and the United States.

The time may well be ripe for a bold initiative on our part. Specifically I have in mind an invitation to the Soviet Union to join the United States in a massive 5-year system of exchange visits of 1 to 3 months by laymen. These would include seminars on the implications of nuclear war. I suggest that the United States propose to the Soviet Union that this scheme be supported by a 3 percent reduction in the military budgets of both countries. Clearly there would be enormous diplomatic, political, logistic, and linguistic problems, but these would be trivial in comparison with the consequences of a nuclear war.

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Environmental Stress on Plants

J. S. Boyer (29 Oct., p. 443) convincingly demonstrates that environmental stresses play a very large role in limiting agricultural productivity. Improvements in the adaptation of most plants to stressful environmental conditions could demonstrably increase productivity, and do so in a benign, environmentally sound fashion. Yet while the Competitive Research Grants Program of the U.S. Department of Agriculture supports various research areas including biological stress, that is, stress imposed on organisms by other organisms, research on environmental stress is not supported by the program. Boyer's article constitutes a powerful argument for including research on environmental stress in the Department's Competitive Research Grants Program; it should be heeded.

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Cotton Dust Research

We protest the implication in Marjorie Sun's article "OSHA reviewing cotton dust standards" (News and Comment, 24 Sept., p. 1232) that our scientific views are influenced by the source of our funding and express our deep concern that Sun's article does not address the scientific merits of the questions at issue.

The charge is made by a union official that the School of Textiles at North Carolina State University receives "hefty support from industry." In fact, more than 80 percent of our support comes from state appropriations and outside grants and contracts from nonindustrial sources. Of the funds we receive from industry, 40 percent comes from an endowed foundation. The industrial support that we do receive is fairly well balanced between the synthetic fiber and the primary textile industries. The former stands to gain by a costly cotton dust standard, while cotton constitutes less than one-fourth of the fiber used in the primary industry. Thus, even if our views were influenced by our source of industrial support, it is not clear which side of the issue we should favor.

Historically, our school has been involved not only in research aimed at technological and scientific advancement of textiles but also in creating better working conditions for employees in the industry. There are more than 300,000 employees in textile-related jobs in North Carolina alone, many of whom are working in cotton plants. As the only textile school in the North Carolina University system, we have strong obligations and commitments to the citizens of North Carolina as well as to the industry. We are proud of our efforts in meeting these responsibilities.

Sun's article deals extensively with the alleged biases of four members of the National Academy of Sciences (NAS) panel. These allegations were made by a union official and by researchers whose published work strongly commits them to the position that exposure to cotton dust represents a proven and extreme chronic health risk. We resent the fact that our integrity is questioned and that the biases and potential biases of those supporting positions different from that of the NAS committee were not examined.

In addition, Sun does not discuss the composition of the NAS panel. The article merely repeats the charge "that the 12-member panel was not balanced in scientific expertise." In fact, nine of the 12 panel members were experienced in medical, chemical, physical, and/or engineering aspects of cotton dust research, and the other three were distinguished scientists in relevant fields but with no direct prior experience in cotton dust research (an internist/immunologist, an immunologist/pathologist, and a lung pathologist). The committee was chaired by one of these three, and the final report was approved by 11 of the 12 panel members. These three panel members were able to assess the relevant data and papers on their merits, free of any preconceived opinions. What better representation could be selected to enable a review panel to objectively evaluate conclusions already "cast in concrete"? This approach contrasts sharply with that of the World Health Organization (WHO) panel, which was chaired by a scientist who holds a well-established position on chronic byssinosis. We are also disturbed by the fact that conclusions from the WHO study, a document that has not yet been released to the public, are cited in Sun's article.

For these reasons, we view the News and Comment article to be less than objective.

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Information about sources of support was provided by William E. Smith, assistant dean of North Carolina State University's School of Textiles. He did not disagree with the characterization that the school received hefty support from industry. In his own words, he described industry funding as "considerable."

—MARJORIE SUN

Erratum: In the report "Maternal ethanol exposure induces transient impairment of umbilical circulation and fetal hypoxia in monkeys" by A. B. Mukherjee and G. D. Hodgen (12 Nov., p. 700), the ordinates for parts A and B of figure 2 (p. 701) were reversed. Correctly labeled parts A and B are printed below.