LETTERS

Uranium Enrichment Technology

In a News and Comment briefing by Colin Norman (21 May, p. 830), it is announced that the Department of Energy (DOE) has decided to build a demonstration enrichment plant based on a laser separation process developed at Lawrence Livermore Laboratory in California.

It should be remembered that this method, which uses atomic vapor, was invented by Richard Levy and G. Sargent Janes at the Avco Everett Research Laboratory in 1969 and demonstrated experimentally by that same laboratory in 1971. Subsequently the method was developed intensively by JNAI (Jersey Nuclear–Avco Isotopes), a joint venture of the Exxon Nuclear Corporation and the Avco Everett Research Laboratory.

Most of the research work was done at the Avco Everett Research Laboratory under the direction of Sargent Janes, while most of the engineering and development was done at Exxon Nuclear in Richland, Washington, under the direction of Harold Forsen. I consulted actively on theoretical aspects of the problem. This development was very successful, and by 1980 not only had the process in general been established but also modules had been built which could be prototypes of an experimental production plant.

In 1980, however, the management of JNAI decided that the political situation was unfavorable for a privately operated isotope separation plant and therefore decided to offer the process to DOE. DOE in turn, through its Energy Research Advisory Board, appointed a special committee of independent scientists to investigate all existing advanced methods of isotope separation. This committee concluded that the JNAI group had advanced significantly beyond its competitors and recommended that the efforts of JNAI and Livermore be combined, with JNAI being the lead laboratory. DOE, however, for inadequately explained reasons, chose not to follow this recommendation and terminated its agreement with JNAI. Having spent $77 million on the project at this point, JNAI had no choice but to cease active operations despite its "lead" technical position.

Regardless of this history, I believe that DOE's selection of the atomic vapor laser isotope separation was the correct decision. It promises to reduce the cost of uranium isotope separation to a fraction, perhaps as low as one-quarter, of the present cost of isotope separation by gaseous diffusion. One attractive feature of this process is that it places the United States in a leadership position in the field and may open a big market for isotope separation services to other countries.

HANS A. BETHE
Floyd R. Newman Laboratory of Nuclear Studies, Cornell University, Ithaca, New York 14853

Polish Crackdown

In the 8 January issue of *Science*, John Walsh (News and Comment, p. 145) reports on formal protests by several American scientific organizations, including the AAAS, the Federation of American Scientists, and the National Academy of Sciences, against arrests of Polish scientists after the declaration of martial law in Poland. Walsh quotes a statement by an official of the Polish Embassy that "detention is expected to be temporary, ending when the immediate situation eases. Only those charged with specific offenses would be held."

Six months later we can definitely say that this detention was not temporary and that many scientists are still in custody, even if they have not been charged with any specific offenses. In March, we in the Philadelphia Committee in Support of Solidarity received information about political prisoners. Among 4000 names of prisoners from five camps (the total number of camps is 65), we identified 40 scientists, 65 scholars, 35 university students, and 9 physicians. The majority of these people are still detained.

A number of persons who have been detained or arrested are prominent individuals who enjoy both national and international reputations. They include A. Wiszniewski (vice president of the Polytechnic University of Wroclaw), H. Lipszyc (professor of Japanese culture and language at Warsaw University), A. Paszewski (director of the Institute of Biochemistry and Biophysics at the Polish Academy of Sciences), and T. Pacuszka (director of a program project on cancer research at the Institute of Nuclear Research, Warsaw). Pacuszka is well known in this country for his work on the biosynthesis and function of gangliosides as receptors for toxins and hormones. He was arrested for participating in a sit-in strike in the Institute for Nuclear Research in Warsaw and sentenced to 2 years in prison.

Art historian Jan Bialostocki was interned while chairing the Congress of Culture, which began on 11 December 1981 in Warsaw. A number of prominent Polish mathematicians and logicians have been interned, including K. Bielinski (Warsaw), J. Onyszkiewicz (Warsaw), M. Srebrny (Warsaw), J. Waszkiewicz (Wroclaw), and A. Wronski (Krakow).

The prolonged internment of Polish scientists and scholars represents a violation of human rights. It is a serious setback to the scientific and educational activities of Polish universities and research institutes. The situation is deteriorating even further because of other circumstances. Academic freedom has been restricted, and military commissars have been appointed at several institutions (including the Polish Academy of Sciences). Subscriptions to foreign scholarly periodicals published outside the ruble zone have been canceled for all Polish academic institutions and academic societies. On 5 January, the Polish Ministry of Sciences, Higher Education, and Technology issued regulations restricting travel abroad, particularly visits by students and individual scientists sponsored by private funds. Although the document states that visits abroad within the framework of existing cultural and scientific exchanges will continue, a number of previously approved visits have been canceled or indefinitely delayed.

On 13 May, the ruling military junta expelled the U.S. science attaché and the cultural affairs officer from Poland (News and Comment, 28 May, p. 966). It appears that these actions aim to isolate Polish scientists and to destroy their creativity and their contribution to social progress.

It is of the utmost importance that members of the American and international scientific communities continue to voice strong protests against this ongoing mass silencing of Polish scientists and academicians.

STEFAN NIEWIAROWSKI
Health Sciences Center, Temple University, Philadelphia, Pennsylvania 19140, and *Philadelphia Committee in Support of Solidarity, Suite 907, 1211 Chestnut Street, Philadelphia 19107*

Erratum: The caption under the photograph of the pineapple plant (News and Comment, 9 July, p. 139) should have read as follows: "When pineapple plants on Oahu stop bearing fruit, the remaining leaves are gathered up and mixed into cattle feed, which led to the milk contamination."

Erratum: The publisher of *The Biology of Seaweeds*, edited by Christopher S. Lobban and Michael J. Wynne, listed in the Books Received column of 16 July (p. 272), should have been given as University of California Press, Berkeley.