LETTERS

Neutron Facilities

Arthur L. Robinson (Research News, 4 Sept., p. 1097) comments on the fiscal problems that cloud the future of those who would like to use neutrons to study condensed phase matter in the United States. He compares the stringencies of life in the United States with the prosperity being enjoyed in Europe and, in the process, compares the facilities at the Brookhaven National Laboratory (BNL) with those at the Institut Laue-Langevin (ILL), the main European center.

Contrary to Robinson's implication, access to the biological neutron facilities at BNL is not "restricted" to a resident, in-house group and a limited group of outside collaborators. Anyone who wishes may apply for time. In the past several years, outsiders have used the biological small-angle instrument at BNL, until recently the only one in the country, about 75 percent of the available time. The BNL instrument for neutron crystallography on proteins has been under constant development for several years. This year outsiders will have about 50 percent of its usable time, and the proportion of its time given to outsiders will increase as start-up problems get resolved.

It is true, as Robinson asserts, that compared to the situation in the United States, the community of biological neutron users in Europe is very large and that their work, done primarily at ILL, increasingly dominates the field. Robinson suggests that it is the openness of ILL, contrasted with the elitism in U.S. laboratories, a difference in administrative outlook, which has brought this about. This misses a crucial point, at least as far as biology is concerned. The main biological instrument at ILL (D11) has been about 30 times faster at collecting data than the best instruments available in the the United States until recently. Even today, the new Oak Ridge facility and the improved facilities at BNL are still about five times slower than D11 and less flexible to boot. The advantage of the D11 is the kind of reward that the willingness of the Europeans to invest in this area has brought them. At the end of the day such an advantage in speed of data acquisition, in a decently managed environment, has got to translate into more experiments done and larger groups of scientists served. To put it another way, how can the United States hope to build a large community of enthusiastic biological users if the available facilities are sufficient to meet the needs of only a few? It isn't simply an administrative problem.

The proof of the thesis that there is a connection between facility quality and success lies in the area of neutron crystallography of proteins. The BNL facility is the best in the world at this time. In this very exciting area it is the United States which is leading the way, not the Europeans.

PETER B. MOORE*
Department of Chemistry, Yale University, New Haven 06511

*Chairman, Neutron Users Advisory Group, Department of Biology, Brookhaven National Laboratory

Polywater on the Highway

The recent review in *Science* by David Eisenberg (4 Sept., p. 1104) of the book *Polywater*, by Felix Franks (MIT Press, Cambridge, Mass., 1981), was still fresh in my mind as I drove west from St. Paul

on Interstate 94. Imagine my surprise to find the establishment shown in the photograph. However a phone call this morning established that the company in question makes cable lubricants, not polywater!

JOSEPH SHAPIRO
Limnological Research Center, University of Minnesota, Twin Cities, Minneapolis 55455

Oak Ridge Cancer Treatments

As executive director of Oak Ridge Associated Universities (ORAU), I would like to emphasize several basic facts. In response to Eliot Marshall's article "Human guinea pigs at Oak Ridge?" (News and Comment, 4 Sept., p. 1093).

1) Patients were never used as "human guinea pigs" in our cancer research; that is, as unknowing victims of experiments for purposes other than their best interests.

2) Dwayne Sexton, the child discussed in the article in *Mother Jones* magazine, did not receive high levels of radiation "to test man's tolerance of radiation in space," but in a last-ditch effort to save his life. Chemotherapy and other treatments had failed. The child was dying; his doctors concluded that the high levels of radiation were essentially the only chance to extend his life. In fact, he lived 3.5 years after first entering our clinic with leukemia.

3) It is true that patients did receive experimental treatments with total body irradiation and that some of the data was provided to the National Aeronautics and Space Administration (NASA)—but as part of a retrospective study, not the treatment protocol. This study also examined 3000 patient records from 46 hospitals. Ironically, the Sexton boy's data was probably not given to NASA at all. We find no record of having done so. In fact, ORAU had completed the report to NASA on high-level radiation in 1967—the year before the Sexton boy died. In 1968, the primary interest at NASA was in low-level radiation.

4) The child's parents were properly informed about the treatment—both verbally and in explanations written in lay language and signed by Mr. and Mrs. Sexton. The parents clearly gave ORAU their informed consent.

5) Although ORAU acknowledges that some program reviewers questioned the *research* value of some of the work of the clinic and the quality of the general facilities, the fact is that patient requirements always came before potential data, and good equipment was more important than high-quality buildings per se. We have done the best we could with the available government funds and have made substantial contributions to the development of nuclear medicine over the past 30 years.

Marshall quotes "a spokesman for the medical division at Oak Ridge" (who incidentally is a very competent information professional at the Department of Energy) as denying the thrust of the *Mother Jones* article but challenging few of the facts. To deny the "thrust" is everything: ORAU's primary goal was to help the patient and further the benefit of nuclear medicine, never to experiment in order to learn "how much radiation astronauts could tolerate before becoming sick."

The charges raised by *Mother Jones* were carefully examined on 23 September during hearings in Washington by the House science and technology subcommittee on oversight and investigations. Following the hearings, subcommittee chairman Representative Albert Gore, Jr. (D–Tenn.), stated that the charges had been "essentially refuted."

The ORAU is an operating contractor for the Department of Energy, formerly the Atomic Energy Commission; it is also a constituent member of the AAAS. It is not a component of Oak Ridge National Laboratory.

PHILIP L. JOHNSON
Oak Ridge Associated Universities, Post Office Box 117, Oak Ridge, Tennessee 37830

Censorship Charge

We write to inform fellow scientists of a distressing instance of political censorship of scientific publication and of the loss of employment inflicted upon a dedicated colleague for opposing this censorship. The publication we discuss stemmed from the Second International Congress on Phosphorus Compounds organized by the Institut Mondial du Phosphate (IMPHOS) and held in Boston in April 1980. IMPHOS is an association of phosphorus and fertilizer producing companies, based in Morocco with its Secretariat in Paris, and funded mainly by North African and Mid-Eastern companies. Its declared purpose is to promote research and use of phosphorus and its compounds.

The Boston meeting focused on the occurrence and recovery of uranium and other accessory elements in phosphate rock, a subject bearing on substantial and widespread new sources of energy. It was most effectively organized by Claude Eon, then director of Technical Research for IMPHOS, and an honorary scientific committee headed by John Van Wazer of Vanderbilt University. The meeting ranged in content from crystal chemistry to recovery technology. It was highly successful, truly international in character, and conducted with unusual amicability and grace. Unfortunately the altruism of the meeting did not persist in the published proceedings (*1*), from which two excellent contributions by Israeli scientists were arbitrarily excluded. The action was taken without the knowledge of the scientific committee and over the objections of Eon. It was imposed at the last moment, after the return of galley proofs by the Israeli contributors, Z. Ketzinel and Y. Nathan. Eon has announced that IMPHOS has fired him for opposing their censorship (*2*).

The post facto intrusion of political censorship into a meeting advertised and conducted as an open gathering of scholars violates the basic traditions of science and the rights of all the participants. It places the scientific committee in the position of appearing to endorse such an act by participating, unwittingly, in a deception. It compromises all of the authors who would not wish to join in the mistreatment of their colleagues. This censorship, and the harsh punishment of Eon who honorably opposed it, demands our strongest condemnation and widespread publicity, particularly as there has been no response to numerous written objections. Failure to publicize such actions would encourage their repetition, and would permit our colleagues to participate in future IMPHOS-sponsored conferences without awareness that IMPHOS practices censorship. We hope that IMPHOS will renounce this practice.

ZALMAN S. ALTSCHULER
U.S. Geological Survey, Reston, Virginia 22092

PAUL B. MOORE
Department of Geophysical Science, University of Chicago, Chicago, Illinois 60637

AARON S. POSNER
Hospital for Special Surgery, Cornell University Medical College, New York 10021

References

1. *Impurity Elements in Phosphate Rock and Phosphoric Acid—Characteristics, Elimination, Recovery* (Institut Mondial du Phosphate, Paris, 1980).
2. J. Derogy, *L'Express*, 28 April 1981, pp. 163–164.

Hinged Teeth

In his report on hinged teeth in snakes (17 Apr., p. 346), A. H. Savitzky states that, although hinged teeth are known in fishes and lissamphibians, they "have not been reported in amniote vertebrates."

I wish to point out that hinged upper canine teeth have been described in two mammalian genera: muntjacs (*Muntiacus*) and Chinese water deer (*Hydropotes*) (*1*). This arrangement allows these ruminants to move their jaws from side to side while masticating plant foods; without hinging, the canines would interlock with the lower jaw and prevent its sideways movement.

RICHARD A. KILTIE
Department of Zoology, University of Florida, Gainesville 32611

References

1. J. Aitchison, *Proc. Zool. Soc. London* **116**, 329 (1946).

Erratum: In the report by A. Persechini and D. J. Hartshorne (18 Sept., p. 1383), the abscissa of the insert in Fig. 2 is labeled incorrectly. It should read "^{32}P incorporation/kinase (μg/ml)."