

letters

"fertile" to "fissile" nucleides or even breeder reactors. Most of these routes would ultimately involve recycle of plutonium or uranium-233. When we have to make the decision on whether or not to go to such a recycle economy depends on, among other factors: the future growth of our electrical energy use, the share of the electrical supply provided by fission, and the extent of our uranium resource. Currently projections of all of these numbers are quite uncertain—just like the current economics of plutonium recycle.

Spinrad's final comment is incorrect. As long as plutonium remains in spent reactor fuel, the intense radioactivity of this fuel will make it relatively immune to diversion. Furthermore, if we ultimately decide to recycle plutonium, it will have considerably more fuel value if it is saved for the initial loadings of breeder reactors.

FRANK VON HIPPEL
Princeton University
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Obituary problem

This is to acknowledge the receipt of a letter from PHYSICS TODAY rejecting the obituary for a colleague which I had submitted. [PHYSICS TODAY had already printed a short staff-written obituary.] I concede the reasonableness of your rules against two obituaries for the same person. However, if such a rule is to be enforced as rigorously as you apparently do, I would suggest that you submit obituaries to the close associates of these subjects at the time of death, and not print an obituary based mainly on outdated information.

HENRY W. NEWSON
Duke University
Durham, N.C.

EDITOR'S COMMENT: To prevent the problem of double obituaries, we strongly urge that those who wish to write obituaries for their colleagues contact PHYSICS TODAY within a few days after the death. This would enable the writer to receive guidelines on length and style, and avoid our writing an unnecessary obituary or soliciting a signed obituary from another associate.

Metrication and Motherhood

It has frequently been assumed that scientists unequivocally support a legislated metric conversion. However, 22 faculty members in our department representing 40% of those contacted signed the following petition:

"Many now believe that eventual acceptance of the International System of Units (the proposed standardized met-

ric system) is "inevitable." If this is true, then we believe that the "inevitable" conversion should take place naturally *without* the prodding of the ten-year program now being considered by the Congress.

"As scientists, we are well aware that the International System of Units is but a step in the evolving relationship of man to nature. Its origins are in the metric system, originally formulated during the French Revolution. The framers of that system could not foresee the impact which subsequent developments would have on technology. Units for developing sciences like electricity or optics were first introduced *ad hoc*. By the early part of this century, the metric system itself had been enlarged to encompass these 19th century developments. With little further modification, this enlarged system has become the International System of Units.

"Although recognized by statute the world over, the International System has not been fully accepted—even by European scientists and engineers. Depreciated units for such common concepts as force, pressure, and magnetic field persist because they are more convenient than their counterparts in the International System. More importantly, as a crystallization of basically 19th century technology, this system is poorly suited to 20th century developments. These developments have been in our understanding of fundamental atomic and molecular processes and in the use of binary—rather than decimal—arithmetic in computers.

"Within a generation, man may well devise a truly modern system—one which combines the coherence of the International System with the convenience of our customary one. We are concerned lest a legislated conversion to a rigid system deprive future generations of the benefits of a truly optimal system of measurement.

"Therefore, be it resolved that we, the undersigned members of the faculty of the Department of Physics and Astrophysics at the University of Colorado, urge the rejection of pending metric conversion legislation."

While circulating the petition among our colleagues, we discussed the broader problems of metrication. Some felt that a generation was far too long for an optimal measurement system to crystallize. The elements for such a system exist now. PHYSICS TODAY could help by publishing some of the many letters it has received that urge alternatives to the metric system.

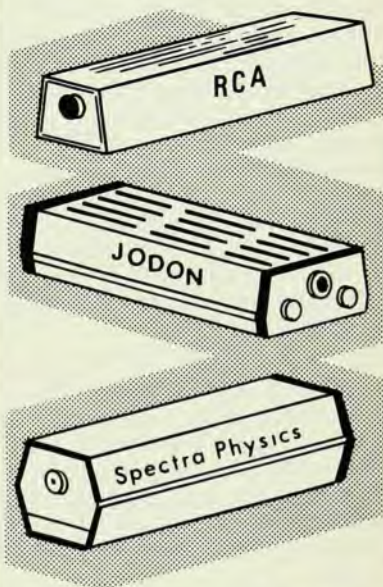
Even if an optimal measurement system is an idealistic goal, many faculty felt that the metric system itself is not sufficiently meritorious to warrant Congressional interference in the conver-

continued on page 74

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Surface Physics

M. PRUTTON

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1975 128 pp.; 62 figs. \$7.75

The Solid State

An Introduction to the Physics of Crystals for Students of Physics, Materials Science, and Engineering
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The Theory of Polarization Phenomena

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This is the first monograph devoted to a comprehensive and unified treatment of the theory of polarization phenomena. Topics discussed include the interaction of particles of arbitrary spin, emission and absorption of electromagnetic radiation, the Zeeman effect, optical pumping, and relativistic effects. (Oxford Studies in Physics)

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Prices are subject to change.

letters

continued from page 15

sion that is now slowly taking place. The economic costs of conversion may be minimized by letting the marketplace rather than a national plan determine the timetable.¹

More importantly, the social cost of conversion would be lessened if each sector converted only when pushed by "popular demand." Not until the majority want it should the weatherman accost his listeners with a sultry 32 degrees Celsius or a few millimeters of rain. Why should the present adult population be forced to adjust to new measures? School children today, however, are being taught metric units and, when adults, they should be amenable to change. The alternative—conversion by plan—is bound to be viewed by adult citizens generally as an attempt by an elitist group of scientists and engineers to force the issue.

Reference

1. Letter of the Comptroller General to Hon. H. R. Gross and reply of the Director of National Bureau of Standards, "Conversion to the Metric System of Weights and Measures," Hearings before the House Subcommittee on Science, Research and Development, March-May, 1973 (pages 390-410).

DAVID F. BARTLETT
CHRIS D. ZAFIRATOS
*University of Colorado
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Federal centers for research

In response to W. K. H. Panofsky's article in the June issue (page 23) concerning the role of physics in meeting the need for technical solutions to problems facing society, we would like to suggest a method by which physics might rapidly expand into environmental areas. Our scheme would allow new PhD's to obtain a reasonable salary and to pursue (half-time) their personal research while obtaining experience and background in environmental physics. It is based on the federal government establishing centers where scientists would work for roughly one-half time (for about the salary of a post-doc) on well defined programs to solve the pressing problems of energy, environment, and so on.

We believe such a system would have several advantages:

- ▶ It commits science and government to a coherent, economical attack on environmental problems—economical not only in terms of money, but also in energy.
- ▶ A half-time program would employ many people while introducing them to a new and perhaps unfamiliar field.
- ▶ Furthermore, a half-time program

would attract scientists, because since it would allow them to continue working on their current area of interest.

▶ It would give new PhD's whose study has been in traditional areas the opportunity to expand into these new areas where there will be future employment both in industry and universities.

▶ The response time for producing qualified environmental scientists would be much shorter than the response time of universities.

▶ It would create a pool of environmental scientists from which the universities could draw instructors needed to meet the expected increase in interest by students in these new environmental areas.

▶ It would maintain the chain between basic and applied research and would do so under the same roof.

▶ In the long run the results of research done at these centers would stimulate new industrial applications and thus increase employment.

▶ A stimulating, productive atmosphere would result at such a center where many people would be drawn together to work on the same problem. This would encourage the optimism and idealism necessary to the growth of science.

▶ These scientists would not have a vested interest in adopting any one particular solution to environmental problems.

▶ Federal funding might be less piecemeal and lead to "continuity and internal consistency," a problem mentioned by Panofsky.

▶ These centers would not, of course, necessarily be limited to physicists, but could include all disciplines.

The success of any such plan depends on the support and participation of the physics community and funding by the federal government. We are not certain how many politicians and scientists are willing to support this kind of program or to participate at such centers. Therefore, we have written to several congressmen and the past president of the APS. And to establish further statistics we would like to receive any ideas you might have in improving or changing this program, participating at such a center, obtaining support from the federal government, and so on.

DON HOOCK
PHILLIP PETERSON
*New Mexico State University
Las Cruces, New Mexico*

Oriental discrimination

In the oriental society it has traditionally been considered a shameful action to speak up for one's own benefit. In the aggressive society of the US, this tradition seems to create an additional disadvantage for orientals whose status al-



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