

letters

can Physical Society being used for political purposes as the tone of the inflammatory resolutions proposed at the Chicago business meeting of the society indicated. No nation the size of the United States can remain free unless it is also strong, and those who would tear down our Defense Department would soon lose their freedoms if it did not exist. To try and place a stigma on scientists who do work for the Department of Defense is the first step towards repression of other groups with whom the vocal minority are not in sympathy. Radical students already control the kinds of work that can be presented at the Japanese Physical Society. Let's not let it happen here.

L. S. BIRKS
*Naval Research Laboratory
Washington, D.C.*

No ABM for Washington

I agree with your July editorial, but wish to register my objection to the reported proposal to protect only Moscow and Washington, D.C. with the ABM. Since men residing in those two cities have control over the infamous red buttons, it appears to me the likelihood of their use would be reduced if Moscow and Washington, D.C. were the last cities to be protected.

J. S. HUEBNER
*University of California
at Riverside*

No depletion of oxygen

I agree with much of what was said in the letter by Henry Knoll (July, page 11). However, I think it is unfortunate that he attempts to gain support for his position by citing the misleading comments by Lamont Cole regarding consumption of atmospheric oxygen by the burning of fossil fuels. The implication of Cole's remarks seems to be that we are headed for serious difficulties because of depletion of atmospheric oxygen. Actually, it is easy to calculate that if we were to burn in one fell swoop all available fossil fuels, we would consume roughly 1% of the oxygen in the atmosphere. We wouldn't even notice the loss!

There are many pollution problems to worry about. Loss of oxygen is not among them. Let's try hard to keep a rational perspective. We need nuclear power because we are eventually going to exhaust fossil fuels and because there are better uses for fossil fuels than burning them in central electricity-generating stations. However, fossil fuel will have to continue in this use for many years; so the pollution

problems associated with them must be solved, as pollution problems associated with nuclear fuels must also be solved.

It is not necessary to be against fossil fuels to be for nuclear power development, or vice versa. We need both energy sources.

HOWARD B. PALMER
*Pennsylvania State University
University Park*

Nonscience majors

Although applied scientists *may* be able to do all for nonscience majors that P. L. Walker Jr says they can, they frequently don't. (See his letter, July, page 17.) As Ernst Mach said, "Economy of communication and of apprehension is of the very essence of science." I was schooled both ways, and I regret the many hours wasted under teachers too far out on the applied end of the spectrum. More fundamental approaches covered the same material better in one-tenth the time.

BRADLEY F. BENNETT
*Universities Research Association, Inc
Washington, D.C.*

Nuclear-energy risks

I would like to say that I enjoyed reading the article by Walter H. Jordan (May, page 32) and also that his arguments on the risk of nuclear energy compared to other activities are well taken. However, his statements on the risk of private flying appear to be misleading.

Taking the figures given in the article, the fatalities per hour of exposure are 8.4 times greater for private flying than for commercial airlines, instead of the 20 times stated in the paper. In addition, the commercial time involves only the process of getting from point A to point B, whereas the private flying includes the considerably more dangerous tasks of learning to fly, specialized flying (such as crop dusting) and stunt flying.

RONALD L. FOX
*Sandia Laboratories
Albuquerque, N. M.*

Information-program questions

As I read the article "New Information Program for AIP" (December 1969, page 29), a number of questions and thoughts crossed my mind. The answers to all of them will have to be reached if your plans are to become completely effective. Assuming that I might have seen something that you didn't, I offer these thoughts to you: *Terminals.* Where would they be lo-

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cated? In offices, physics departments, physics libraries? Who would cover the cost of such terminals? What would they cost? Allocations in such areas have been quite small, especially where the service only covers a small segment of a given university's community. A real drive should be underway to convince the presidents and leading officials of universities of their importance. Where would the people come from who would operate them? It is possible that such terminals may be destined for departmental libraries. Presently such libraries might not be able to handle these kind of services because of cost. Present book budgets for such libraries are around \$7000. Services costing any sizable segment of that amount (say \$1000) would have to be given a very hard look before they were subscribed to.

SPIN. What will it cost? How many places have the facilities to handle it? Who will pay for it?

Microform. Large libraries lack microform reader/printers in large numbers. If you are going to initiate a system that makes use of these, you should investigate this problem. Faculty members are reluctant to use them.

Information Centers. What and where will they be? Who will operate them? How will they fit into existing arrangements?

It may be advantageous for AIP to make its plans known to the directors of say 50 of the largest university libraries so that they might provide feedback, which might help remove some unseen bugs. It will also give AIP an opportunity to make them aware of an idea that they might miss and that could affect their budget planning.

LEON J. CREEK
University of Rochester
Rochester, New York

REPLY FOR AIP: Creek's comments regarding AIP's new information program are very much appreciated; we are quite interested in corresponding with those who have specific suggestions and questions regarding the plans and services of our National Information System for Physics and Astronomy. As the system's services are implemented, we hope that we will continue to receive constructive suggestions from our subscribers.

While we cannot yet give specific answers to all the points raised by Creek let us begin with the data now available. First, with regard to the questions concerning remote terminal access, this is, as mentioned in the **PHYSICS TODAY** article, a long-range goal of the system. It is not expected that terminal access to our central information

store would be made by subscribers prior to approximately 1975. Terminals and on-line systems are multiplying rapidly, the changes in the technology, the costs of such operations, and so on, may make such a service economical and available prior to the planning date. The terminals would undoubtedly be located in fairly large organizations with operative systems that require such equipment.

The factors affecting costs of terminal access are almost too numerous to detail here. Let us note, however, that we are quite aware that the costs are, and will be, a major consideration in terminal use and installation. We are also well aware that a considerable effort will be required to publicize the benefits to be derived from on-line access to a large, centralized information store. These aspects of the system are all, however, in the future and our plans are yet tentative. We would, of course, be happy to participate in any presentation to university librarians wherein the services of our system, the long-range plans and expected benefits of the system could be discussed.

With regard to the questions regarding SPIN, our magnetic-tape record of bibliographic data, this computer-readable copy of the file's recent input is presently being distributed to a Pilot Users' Group composed of leading university, industry, and government information centers. Each of the organizations have on-going computerized information systems that vary greatly, and that operate with diverse types of hardware and software. Through the experience gained at these installations, we expect to receive criticisms and suggestions regarding the tape formats, coverage of the field, data elements, and so on. Based on this interaction, the SPIN tapes will be revised prior to availability, on lease, to the general public. The lease cost per year has not yet been determined. It is not expected that the lease cost will recover the expenses of creating the tape; however, these costs can be distributed through the other services and publications obtained from the original keyboarding of the information.

With regard to Creek's comments on microforms, we would point out that the service is intended to supply any subscriber, upon request, with a microcopy of a primary journal article brought to his attention by the NISPA services, and to which he does not have ready access. One could equate this to a service already in common use in the information industry and common to many libraries. We have, of course, made investigations as to availability of reader/printers, types of microforms being used, and so on, and are also aware of the reluctance on the part of some

continued on page 59

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to use the microcopy. However, libraries may be interested to know that any item announced by NIPSA is available at nominal cost, with little delay, from system headquarters. It may be that for certain faculty members, or in some libraries the library staff, would need to make an enlarged copy of the microform. This too is not unusual, and would in the long run probably provide the requested copy to the reader faster than a prolonged search of holdings, an interlibrary loan or photocopy request of a distant library that may have a copy of the requested article.

Our plans are to establish an information center that will, in several ways, be a focal point of the system and its services. This center is described in our recent report, "A Program for a National Information System for Physics and Astronomy 1971-1975" (ID 70-P), as are our plans for implementation of the system. By supplying our SPIN tapes to numerous university and regional centers, they will in turn provide SDI, retrospective search, and other services to their subscribers. It is doubtful that NISPA would itself establish regional centers, but it would, as other information systems are currently doing, operate through existing centers.

Creek's point about publicizing the system so that we might receive feedback from the community is well made. We have from the beginning worked closely with several advisory groups whose members are leaders in the fields of physics, astronomy and information science. A corps of respondents, representing leading scientific societies as well as a broad spectrum of research organizations, is also consulted frequently. We distribute our reports and a quarterly newsletter to several hundred in the field to maintain an active liaison with the community. Much of this activity is detailed in our report ID 70-P, available upon request.

ARTHUR HERSCHMAN
Director
Information Division
American Institute of Physics
New York, N.Y.

Unemployment solution

An obvious solution for the critical unemployment problem among physicists has received little or no discussion in PHYSICS TODAY forums. That would be for the labs, instead of cutting back their staffs by 5-10%, to give all of us an extra day or two a month off (*sans recompense*, of course). I believe that an AIP-conducted poll of the membership of the societies on individual prefer-

ences with regard to the question of lay-offs and hiring freezes versus reduced work month could serve a useful purpose as an indicator of majority opinion. If you should print this letter, please withhold my name: I am fortunate to still have a job.

Name withheld

A physicist in biology

Compliments are due Freeman Dyson for his poignant historical perspectives and provocative ideas for the future of physics (September, page 23). It is personally encouraging to find a distinguished particle theorist with an appreciation and apparent excitement for some of the problems in biology and astronomy. As a physicist who for the last few years has been doing research on protein structure (and thoroughly enjoying it!) I feel that I no longer have to apologize to my physics friends (or to myself) for having strayed into molecular biology and neglected "pure" physics. I can now more openly, and in good company, reveal my excitement as a physicist for the intriguing organization and elusive behavior of living systems.

It is also difficult to resist noting, lest any prospective biophysicists be led astray by the article, that proteins are chains of *amino acids*, not nucleotides; this I am sure was a slip of the pen.

JOSEPH A. SPADARO
Syracuse, N. Y.

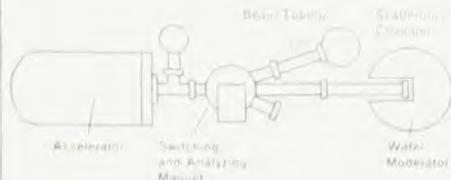
Corrections

SEPTEMBER 1970, page 24, column 2, line 31. It is not true that molecular biology had no name in 1938. The name appears in the 1938 Annual Report of the Rockefeller Foundation, in a piece by Warren Weaver describing the pioneering program of the Foundation in this field. The article of E. L. Hess quoted in the text mistakenly attributes the name to Astbury and states that it first appeared in the literature in 1945-6.

Page 25, column 1, line 53. The MANIAC was not the Princeton computer but was a similar machine built at the same time by Metropolis and his colleagues at Los Alamos. The official name of the Princeton machine was "The Institute for Advanced Study Computer."

Page 25, column 3, line 2. "from the tens of GeV that we had in the 1960's to the hundreds of GeV that we shall have in the 1970's."

Page 26, column 3, line 9. "A protein is a long string of units, each unit being one of twenty amino-acids. A nucleic acid is a string of units, each being one of four nucleotides." □



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