cieties and journal publishers to provide each other's readers and members with reprint services would provide decreased cost and increased income to publishers, and wider dissemination of physics information.

Also identification of specific interests of members and subscribers could provide increased interest to advertisers, which would decrease the cost of specialized reprint services.

JEHUDA ZIEGLER
New York University
New York, N.Y.

COMMENT FROM AIP: *The Journal of Physical and Chemical Reference Data* published jointly by AIP and ACS for the National Bureau of Standards inaugurated a reprint program with the start of publication of this journal in 1972. These reprints are produced at the same time as the journal. Each article is separately bound in individual orders. The same technique is about to be implemented for *Reviews of Modern Physics* published for the American Physical Society by AIP.

In addition, an advertisement in the March issue of PHYSICS TODAY (page 91) announced the start of AIP's new reprint service for all of the journals published by AIP. All an individual has to do is to send us the article title, author, journal and date, and we will mail a reprint of the article. Orders are filled on the same day they are received. The price is 25¢ per article page, plus postage.

Current Physics Advance Abstracts subscribers can order an article reprint even before the article is published. As soon as the article is published, the requested reprint will be mailed.

ROBERT H. MARKS
Associate Director of Publishing
American Institute of Physics

Disability insurance

Disability resulting from accident or disease is one of the most serious hazards of life. The deficiency most frequently found in personal insurance programs is a lack of balance between disability insurance and life insurance. Even when a person carries disability insurance, the particular policy may not be suitable or adequate. In taking leave from the University of Maryland for a year, I was faced with acquiring my own fringe-benefit package because the University Research Foundation I went to had no package.

Most of the APS membership know that life insurance is available through the society and elsewhere at competitive costs. I have always thought that the Society fell down on its responsibility when it endorsed the present life-insurance program without at the same time requiring the presence of a disability insurance. I have found that a good disability policy is expensive. By good, I mean a *professional* disability policy, not the typical policies without the professional coverage or the University policy with a two-year clause. I believe that here is a chance for the APS to do something worthwhile for its membership. Now, when the APS Plan Administrator will be getting proposals for such a program of protection, I urge all members to make known their interest in a program of *professional* Disability Income Protection.

SHERMAN K. POULTNEY
Newport News, Virginia

COMMENT FROM APS: Our society has moved a long way in its professional concerns responsibilities since the establishment of its Life Insurance Program in 1969. When the Life Insurance Program was first suggested, our attorney and many members of the Council did not think it proper for the APS to endorse this life-insurance program. However, the Tax Reform Bill of 1969 enabled the Society to do something that previously would have been unacceptable. If the Professional Disability Insurance had been proposed to the Council at the time the Life Insurance Program was instituted, I'm sure that it would not have been accepted. The Life Insurance Program of the APS has been very successful, and more than 3500 members of our Society are now covered under this insurance program. Because of the success of this program, the accident and dismemberment insurance program has also been made available, and we are now looking into a Professional Disability Insurance Program. We do not, as yet, have a proposal for a Professional Disability Insurance Program that is acceptable to the APS insurance administrator and the officers of the Society. When we do, the members will be given the opportunity to participate in this new insurance program as soon as possible.

W. W. HAVENS, JR
Executive Secretary, APS

Disagrees on math

It was interesting to read Robert Hermann's letter (December 1972, page 9) regarding physicists and their lack of mathematical training.

As one whose basic training was in physics and who hires physicists for various jobs, I could not disagree more with Hermann's contention that physi-

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cists are lacking in mathematical training. I feel, in general, that they have more mathematics than they can use in a practical situation. What concerns myself and any other person in industry is, can they do a job for me, not how much fancy mathematics they can swirl around. The crucial question in the job market is, can they contribute something of economic value, can they make something work, and can they solve a problem? Too many physicists are fascinated to the point of distraction regarding the latest evolution of the spin reaction of something or other, not whether they can be of any economic help to anybody.

JOEL S. SPIRA
Lutron Electronics Company
Coopersburg, Pennsylvania

Chicago congratulations

I attended the annual APS meeting held in Chicago last week. The Topical Conference on Energy was one of the best attended physics meetings in recent years. I wish to congratulate APS for conducting the Symposium on Problems of Current Interest to Public and Physics Community.

M. A. IJAZ
Virginia Polytechnic Institute and State University
Blacksburg, Virginia

No Theory in *Phys Rev*

I was somewhat saddened and disappointed by the decision, embodied in a recent announcement by the editor of the *Physical Review* [Phys. Rev. D 8, 357 (1973)], to eliminate or drastically curtail publication of papers regarding "fundamental theories" in that journal. To dispel the idea that I have a direct personal stake in this, let me immediately point out that I am not myself a worker in this particular field.

It is clear certainly that papers on "fundamental theories" should not constitute a very great fraction of the content of the *Physical Review*. However, in moderate quantity, they contribute a refreshing change from the usual working out of yet another aspect or ramification of a fashionable, accepted theory. They serve a useful function in keeping the conventional work honest and on its toes by forcing one to compare the conventional with the more outlandish.

As a side issue to this, and an example of how "outlandish" theories test "conventional" theories, it is amusing to observe the set of criteria the editor has put forward to test prospective papers in fundamental theory. Is it really true that in a representative paper in the *Physical Review* today the author states "all implied assumptions ... clearly and concisely"? Do all authors of *Physical Review* papers "convincingly show" that their assumptions "explain hitherto unexplained observations," "expose new relations between known data," and that these assumptions are "simpler and fewer than in existing theories"? Do authors show that their assumptions "do not contradict existing experimental facts," and do they "investigate possible new consequences of [their] assumptions and whether these could be tested by new experiments"? These are excellent criteria, but I dare say it is a rare paper indeed that satisfies all of them.

On a deeper philosophical level, philosophers of science, physicists themselves, and others conscious of the practice of physics today have become aware of excesses in the "revolutionary paradigm–normal science" dichotomy introduced by the work of T. S. Kuhn (*The Structure of Scientific Revolution*, U. of Chicago Press, 1962). According to this account, in briefest outline, science progresses by "quantum leaps" during "revolutions" when a new idea (paradigm) is introduced, which becomes universally accepted, and is elaborated, criticized, extended, and generally worked through by the entire scientific community. This is "normal science." It is followed by another revolution, which introduces a new paradigm, more normal science and so on.

This may indeed be the way physics operates, and it may be the most efficient way to gain an understanding of nature. Somehow, however, one doubts it, at least in its most rigid form. There are few revolutions and few revolutionaries. The rest are practitioners of normal science. In the picture presented by this account it is a mystery why an autonomous, creative human being would choose to face the dreary prospect of grinding out some more consequences of someone else's paradigm; it is a wonder there are any "normal scientists" at all.

It is just possible that the "outlandish" papers in fundamental theory may help to break the back of the caricature embodied in this rigid pattern, or at least humanize it somewhat, or give it some spice. On the other hand, the editor's decision is a gesture that tends to support the "paradigm–normal science" pattern, and serves to expel and exclude any variation from it. In particular, by relegating all "unusual" work to journals outside the regular ones such as *Physical Review*, this work is effectively exiled, pushed further out of the mainstream of physics and given even more of a crackpot label. Its salutary qualities are there-