

subtracted out of the current theory. Causality is enhanced by their omission—the vacuum again becomes a bona fide vacuum in pair theory. Moreover, a simple physical reason why the electron does not explode is provided. Surely nature has not introduced the four fieldlike and two inverted pairlike interactions (the two classes of interactions forbidden in pair theory) just so that field theorists can study the properties of the renormalization group!

Pair theory deserves a thorough airing. The easiest way to accomplish this would be to open up *Physical Review Letters* to papers on the subject. If the field theorists will not allow that, my feeling is that all of physics is the poorer.

The history of science should teach us that it is imprudent to assume that everything is known about any subject—and certainly about a subject with as many mathematical difficulties as quantum electrodynamics. Nature is usually very simple if the right perspective can be found. A postulate as sweeping as the pair hypothesis should be disprovable almost immediately. If not, it should be examined exhaustively both experimentally and theoretically. Its simplicity and beauty demand no less.

## References

1. R. C. Stabler, *Phys. Rev. D* **8**, 1867 (1973).
2. R. C. Stabler, *Phys. Rev. D* **8**, 1932 (1973).
3. K. Greider, *Phys. Rev. Lett.* **44**, 1718 (1980).
4. This course has been summarized (understandably much of the banter is missing) in a lecture note reprint volume, R. P. Feynman, *Theory of Fundamental Processes*, Benjamin, New York (1961). That some modification of the Feynman rules might outlive field theory has been noted by J. D. Bjorken, S. D. Drell, *Relativistic Quantum Mechanics*, McGraw-Hill, New York (1964) p. viii.
5. R. C. Stabler, *Bull. Am. Phys. Soc. Ser. II*, **12**, 1076 (1967).
6. S. S. Schweber, *An Introduction to Relativistic Quantum Field Theory*, Harper & Row, New York (1961) p. 425. Only diagrams (e) and (f), and complex rotations thereof, contribute according to the pair hypothesis.

ROBERT C. STABLER  
Princeton, New Jersey

7/84

THE EDITORS REPLY: We regret that Stabler's recent submission to *Physical Review Letters* was not publishable, but the refereeing his paper received, which was expert and thorough, was also unanimous in recommending that it not be accepted. Other channels of publication are not foreclosed to him by this action; in particular, the meetings of The American Physical Society are

open to his contributed papers if he chooses to submit them.

GEORGE H. VINEYARD  
GEORGE L. TRIGG  
*Physical Review Letters*

10/84

## Nuclear tip from Canada

We noted with interest the letter from Carroll Mills (September, page 117). The Radiochemical Company of Atomic Energy of Canada Limited is the manufacturer of the Slowpoke-2 Research Reactor to which Carroll refers, and we are, of course, delighted to read his proposal.

For the record, it should be stated that the success of the Slowpoke-2 programs in universities owes a great deal to the owners and users concerned, especially because of the ways they have matched research and teaching programs to the reactor's capabilities. It is also true to say that the Slowpoke's purchase price and operating costs are considerably lower than those for conventional research reactors.

It will be of interest to many of your readers to know that, in view of the controversy that exists over the use of highly enriched uranium fuel in research reactors, we have developed a low-enriched uranium fuel for Slowpoke.

The first Slowpoke-2 fueled with low-enriched uranium will be installed in 1985, and this fuel can also be fitted into existing Slowpoke-2 reactors. We have changed our fuel-loading procedure as well, so that owners of new or refueled Slowpokes will be able, under normal operating conditions, to run their reactors for about 20 years before new fuel is required.

Given these developments, the proposition set out by Mills makes even more sense.

MICHAEL SPENDER  
Radiochemical Company  
Atomic Energy of Canada Limited  
Kanata, Ontario, Canada

11/84

## Corrections

October, page 66—in the article by Malcolm Beasley and Theodore Geballe, figure 6 was adapted from a paper by H. W. Meul, C. Rossel, M. Decroux, O. Fischer (University of Geneva), G. Remenyi (Grenoble) and A. Briggs (Grenoble), *Phys. Rev. Lett.* **53**, 497 (1984). Because of an editorial oversight, throughout the article, beyond figure 1, figure  $n$  in the text corresponds to figure  $n + 1$ .

December, page 27—First-generation magneto-optical recording devices are expected to feature data access times of 50 msec, not 50 nsec. □

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