ly being subpoenaed, I doubt that most reviewers would take that possibility into consideration when writing reviews.

STEVE BECKER
Bucknell University
3/90 *Lewisburg, Pennsylvania*

The article "In Defense of Confidentiality" overlooked one most important aspect of the case in question—whether or not the referees had any association with a competing company. In my opinion it is less important to keep referees confidential than it is to keep research confidential. However, I do see that undue influence could be applied if referees were known during reviews. Lack of confidentiality might discourage some referees from continuing in that capacity.

It is essential that scientists and their companies have the knowledge that up-to-date research and ideas are protected from procurement prior to and during the publication process. If this cannot be guaranteed, one thing is certain: Companies will not allow research to be published until all the legal and commercial strangleholds are applied. This will stifle the dissemination of current information and effectively put a brake on rapid evolution of ideas.

RICHARD J. E. PARROTT
BHP Petroleum Pty Ltd
12/89 *Melbourne, Australia*

New Device Lets You *Un*-Water Your Lawn!

Mark Kuzyk (November 1989, page 129), motivated by John Wheeler's account of the "busted bottle" (February 1989, page 24), performed an interesting experiment to settle the Feynman inverse sprinkler problem. However, we must disagree with his conclusion that the sprinkler moves when water is forced out (the normal mode), but not when water is drawn in (the inverse mode). We suggest that the margaritas Kuzyk and his colleagues had drunk may have impaired their judgment.

Kuzyk and his colleagues were apparently unaware of a body of literature published in the *American Journal of Physics*[2] that culminated in our paper[3] of July 1989. In our paper, we describe an experiment designed to resolve the inverse sprinkler problem and conclude that when the sprinkler is operated in the inverse mode, the sprinkler head rotates in a direction opposite to that of the normal sprinkler, with an angular momentum equal and opposite to that of the water. Only when the magnitude of the water velocity in the sprinkler nozzle is changing is there a net torque on the sprinkler head. In steady state, the sprinkler head moves at whatever angular frequency it acquired prior to attaining steady state.

We see no contradiction between Feynman's and Wheeler's accounts of the "busted bottle." Clearly Feynman's account indicates that the flexible tubing used to simulate the sprinkler head did move. Wheeler is more specific. He states that the tubing only twisted when the pressure was increased, that is, when the magnitude of the water velocity in the tubing was increasing, generating a net torque on the tubing.

In our experiment, the sprinkler head was mechanically isolated, in contact only with the water bath. This resulted in a very low external torque and allowed us to verify that angular momentum is conserved. We suggest that Kuzyk's experiment was subject to sufficient friction to render it insensitive to the inverse sprinkler effect.

References

1. R. P. Feynman, '*Surely You're Joking, Mr. Feynman,*' Norton, New York (1985), pp. 63–65.
2. H. S. Belson, Am. J. Phys. **24**, 413 (1956). A. T. Forrester, Am. J. Phys. **54**, 798 (1986); **55**, 488 (1987). A. K. Schultz, Am. J. Phys. **55**, 488 (1987). L. Hsu, Am. J. Phys. **56**, 307 (1988).
3. R. E. Berg, M. R. Collier, Am. J. Phys. **57**, 654 (1989).

RICHARD E. BERG
MICHAEL R. COLLIER
University of Maryland
11/89 *College Park, Maryland*

Greenhouse Effect's Glacial Pace

There is some irony in the juxtaposition of Philip W. Anderson's Reference Frame column on research strategy for theorists (February, page 9) and the news story "Climate Modelers Struggle to Understand Global Warming" in the same issue (page 17).

Anderson quotes Francis Crick on the problems of theoretical work: "The principal error . . . is that of imagining that a theory is really a good model for . . . nature rather than being merely a demonstration (of possibilities)—a 'don't worry' theory. . . . It is difficult to believe that one's cherished theory, which really works rather nicely, may be completely false." The news article, when