appointments and promotions. If the supplementary material does not find its way into such databases as the *Citations Index*, then its relevance may be decreased.

The improvements that can be made in the current system are clear, substantial, and could, for the most part, be instantaneous. I suggest that we move forward with Hendrickson's proposals as rapidly as possible.

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Energy Consumption

Bill Keepin and Gregory Kats (Letters, 26 Aug. p. 1027) correctly point out the continued potential of conservation for restraining energy consumption and limiting carbon dioxide emissions. But their dismissal of nuclear power is regrettable because, whatever the success of conservation, massive supplies of energy will continue to be needed. Nuclear power is currently the most practical source, if one wants to minimize the use of fossil fuels.

Consideration of U.S. energy history from 1973 to 1987 (*1*) shows that total energy use rose 2.7%, the gross national product (in constant dollars) rose 40%, electricity generation by utilities rose 38%, electricity sales rose 43%, and total use of fossil fuels dropped 3%. This combination of near-constant energy demand and continued electrification can serve as a model for the future, at least if the electricity comes from nonfossil sources.

Unfortunately, more of the rise in electricity generation came from coal than from nuclear power (in a ratio of 1.66 to 1), but had greenhouse fears exceeded radiation fears this could have been reversed. Even so, nuclear power now provides about 20% of our electricity, and its increased use since 1973 accounts for the drop in fossil fuel consumption. Nuclear power not only can substitute for fossil fuels in existing electricity generation but can also displace fossil fuels in other sectors by continued electrification of the energy economy. As of 1987, electricity represented 65% of the energy input for the residential and commercial sector and 35% of the input for industry. Both of these fractions can continue to rise. There are also prospects in transportation.

Solar power, including hydroelectric power, has advantages similar to those of nuclear power along with the additional advantages of providing direct heating and, in some of its forms, of being technologically simple. Thus, although contributions from solar power aside from hydroelectricity are still on a small scale, its development deserves high priority.

The greenhouse problem represents one of the greatest global environmental threats that civilization has faced. The overriding goal of energy policy should therefore be to make fossil fuel use "as low as reasonably achievable" (ALARA, in the radition protection acronym). Conservation, nuclear power, and solar power can each contribute toward this goal, while reducing the problem of acid rain and the dangers of impending oil shortages. It is beyond our predictive abilities to gauge realistically how much each can eventually contribute and at what cost. Prudence therefore dictates that we now explore and exploit each to the fullest extent practical.

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Knot Really

Sometime before 300 B.C., Alexander the Great "deigned" surgery important to loose the Gordian knot. Now we have been "Luecke" to see Dehn surgery performed on a Gordonian knot (Research News, 9 Sept., p. 1291). I know I feel better to have witnessed this historical parallel, and I always believed Tietze's problem would never fly!

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Relman on Maddox

John Maddox, editor of *Nature*, seems to feel (Letters, 23 Sept., p. 1585) that his handling of the Benveniste article is a model to be emulated by editors of scientific journals who wish to show "alertness to their readers' interests." However, if Maddox means to suggest that we editors ought to go into the business of investigating the authenticity of the papers submitted to us, I believe he is seriously mistaken. Editors and their reviewers have neither the resources nor the authority to act as laboratory cops. Even if they did, and therefore undertook routine on-site verifications of submitted work, the results would surely be disastrous for the whole scientific enterprise, which, as I have pointed out before (*1*), is based on the presumption of trust in the honesty (but not the infallibility) of one's colleagues.

But if Maddox disagrees and thinks that an investigation was warranted, why did he not do it *before* publication? His answer seems to be that the publication of the spurious article, followed by the results of the investigation served to show "how easily authentic science may be simulated by the careful selection of data. . . ." and "how likely it is that much second-rate science finds its way into print somewhere."

I find that explanation unpersuasive. All scientists well know there is much second-rate research work being done and that error and self-delusion are a common and inevitable part of the system. That is why we have peer review, whatever its limitations, and that is why, in the give and take of scientific discourse, no work is immune from criticism.

If an editor has good reason to suspect fraud, and not simply error, he has an obligation to see that an investigation is launched through appropriate channels, but even in such cases he should not, and cannot, be the investigator himself. That responsibility, as noted by the International Committee of Medical Journal Editors, belongs primarily with the institution sponsoring the investigators' work.

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Clarification

The announcement "Trivelpiece to leave AAAS" (News & Comment, 7 Oct., p. 27) states that Philip H. Abelson, science adviser to AAAS and former editor of *Science*, has been named acting executive officer of AAAS. This appointment will become effective when Alvin W. Trivelpiece, present executive officer of AAAS, leaves AAAS to assume his new post as head of Oak Ridge National Laboratory and vice president of Martin Marietta Energy Systems, Inc. The transition will be completed by 1 January 1989.