LETTERS

Restrictions on Scientific Publication

Recent attempts to restrict the publication of scientific papers (News and Comment, 22 Jan., p. 383) and William D. Carey's reaction to these attempts (5 Feb., p. 635) can be illuminated by a review of *Science*'s experiences with attempted censorship in 1942. In one instance, the National Academy of Sciences' Advisory Committee on Scientific Publications restricted the appearance of an article "On penicillin" until others brought to its attention the fact that *Nature* was publishing detailed reports on the same topic (*1*). This incident led James McKeen Cattell, *Science*'s owner and editor, to get the committee to state that "it is not the intent to withhold publication of advances in medical knowledge which would be of widespread value in the treatment of war injuries and the control and treatment of disease" (*2*). Similarly, when the Office of Censorship prevented issues of *Science* containing supposedly sensitive material from being mailed to foreign subscribers, Cattell had to point out that the notes being objected to were supplied by the Science Service and had already been published in many newspapers (*3*). Cattell and other editors, however, cooperated with the advisory committee in reviewing material on nuclear physics and electronics, thus following the lead of the physicists themselves, who had started a program of self-censorship as early as the late 1930's (*4*).

Carey's comments stress that "even in wartime, such a demand [for the prepublication review of scientific articles] would be an extreme one, and in the absence of a national security emergency it is incongruous." Similarly, in response to Cattell's debates with censorship officials, the *New York Times* (*5*) editorialized that "probably . . . the editors of scientific periodicals are better judges [than anyone] of what may or may not be of value to the enemy," concluding that "all [scientists] make discoveries that have some application in totalitarian war." As Carey, Cattell, and the *Times* all apparently agree, some situations—like war—may require some sort of restrictions. But even in these cases the restrictions must be carefully developed and applied lest they lead to incidents as ludicrous as those of 1942. More important, one does not have to agree with the *Times*'s 40-year-old claims for the judgment of scientists to believe that such restrictions—especially without the exigency of a "national security emergency"—raise, as Carey stresses, many troubling constitutional questions. On both historical and legal grounds, then, let us hope that these attempts to restrict scientific publication continue to be strongly and effectively resisted.

MICHAEL M. SOKAL
Department of Humanities,
Worcester Polytechnic Institute,
Worcester, Massachusetts 01609

References and Notes

1. See E. P. Abraham and E. Chain, *Nature (London)* **149**, 328 (1942). The paper submitted to *Science* was eventually published: K. Meyer, E. Chaffee, G. L. Hobby, M. H. Dawson, E. Schwenk, G. Fleischer, *Science* **96**, 20 (1942).
2. See folder, "Committee on Scientific Publications, Cooperation with Committee on Medical Research, Question of Withholding Preventative Medicine, Cattell," National Academy of Sciences Archives, Washington, D.C.
3. "Correspondence in regard to the censorship of scientific journals," *Science* **96**, 216 (1942).
4. S. R. Weart, *Phys. Today* (February 1976).
5. *New York Times*, 6 September 1942, p. 8; reprinted in *Science* **96**, 274 (1942).

"Creative Evolution"

As reported in recent issues of *Science* (News and Comment, 6 Nov., p. 635; 13 Nov., p. 773; 4 Dec., p. 1101; 11 Dec., p. 1224; 1 Jan., p. 33; 8 Jan., p. 142; 22 Jan., p. 381) and elsewhere, a small group of creationists is stirring up a legal storm with their rigid views of "creation science" as a curriculum alternative in opposition to generally accepted concepts of biological evolution. Many evolutionary biologists appear to be responding in an uncompromisingly hostile manner as if no compromise were conceivable in teaching about the origins of life. Overlooked is the fact that many of us teaching life sciences in the universities and high schools are *both* Christians and evolutionists. The view has long been held among many, if not most, educated Christians that evolution is God's awesome method for achieving the creative process—in other words, adaptive diversity of species. One need only look at the relatively rapid appearance of new variants of animals and plants or pesticide-resistant and antibiotic-resistant strains of organisms to realize that this process continues unabated.

The sadness of the rigid reasoning of spokesmen for the Institute for Creation Research is in considering creation and evolution as irreconcilable. Many biologists who also believe in a supreme being governing an orderly universe of marvelous design deplore the efforts of these "creationists" to force their literal religious views into the curriculum. One may also object to the attitude of intellectual arrogance among certain evolutionists who push their view that the original forms of life appeared entirely by accident or that matter itself sprang from nothing. The evidence of evolution does not and cannot reveal the source of the basic chemical elements or the primal source of life.

The current legal conflict could be rather easily resolved in the following manner. The introduction of the subject in elementary textbooks could state something like: "A few scientists believe in a relatively recent inception of the earth and living organisms by sudden creation of the universe, energy, and life from nothing. Most scientists, however, believe that the earth and all forms of life gradually evolved over several billion years. Evolution can be viewed as a creative process continuing over a long period of time. Students should be aware at the outset that the extensive evidence of evolution is not necessarily in opposition to religious concepts of creation by a supreme being. Note that the causative beginning or primeval appearance of matter or life in our universe, the inception of something from nothing, is not at issue."

In other words, a fairly short exposition of alternative viewpoints should satisfy the objection of those Christians and others who falsely see evolution as anti-God. Meanwhile, let us hope the misguided effort to introduce a literalist view of Genesis under the guise of "creation science" is exposed as a stance with little or no support from the many who see creation and evolution as quite compatible.

W. H. HILDEMANN
Department of Microbiology and
Immunology, School of Medicine,
Center for the Health Sciences,
University of California,
Los Angeles 90024

"Pruning" Research Funds

The remarks attributed to Presidential Science Adviser George A. Keyworth by Colin Norman (News and Comment, 1 Jan., p. 39) bring to mind the pronouncements of the fictitious Chauncey Gardiner, in Jerzy Kosinski's political satire *Being There*. Kosinski depicted the rise to prominence, as an administrative spokesman, of a newly liberated recluse who responded to all questions on social issues in terms of gardening platitudes. While conceivable, although debatable, that certain aspects of big science would benefit in quality by a cycle of fiscal constraint "just as the occasional

pruning of a tree can promote . . . its health," application of this philosophy to individual small science projects would undoubtedly be detrimental. Many modest continuing grant awards are already marginally operational because they lag behind inflationary pressures. Cutbacks in the total amount of federal monies available for competing renewals or new proposals would shrink the level of such activity, and rather than select for innovation could give rise to the survival of "safe" data accumulators. The net result of "pruning" 12 to 15 percent of federal basic research funds would be contrary to the national interest. The deliberate implementation of such a sustained policy would bring about the disappearance of the current cadre and the next generation of highly qualified, university-based, academic researchers; this would cause, in turn, the eventual dependence of the United States on foreign developments for its future agricultural, medical, energy, and defense technology transfers.

STUART W. TANENBAUM
School of Biology, Chemistry, and Ecology, College of Environmental Science and Forestry, State University of New York, Syracuse 13210

Scientific English

The report by B. J. LaBonte and R. Howard (20 Nov., p. 907) reassures me, not only that the sun's radius still conforms to specs, but also that scientific English is alive and well. After reading the second sentence in the third paragraph, I cannot resist adding:

Strange new words I relish
Like nectar or tonic.
I now know my line printer
Is boustrophedonic.

DAVID P. STERN
31 Lakeside Drive, Greenbelt, Maryland 20770

Newton's Malady

Leonard Goldwater's criticisms of the use of hair to demonstrate possible mercury poisoning of Isaac Newton (Letters, 13 Nov., p. 742) should not pass without comment. Numerous investigations into mercury in hair have shown that it is a reliable and sensitive method for assessing mercury ingestion. For example, when thousands of Iraqi peasants ate grain contaminated with extremely high doses of organic compounds of mercury there was a strong correlation between the concentration of mercury in their hair and the severity of the symptoms of mercury poisoning (*1*). People who have consumed fish contaminated by mercury (minimata disease) show very high hair concentrations of the element, as do those who have eaten contaminated meat (*2*). A study in Italy of workers exposed to mercury contaminations from industry showed that hair was a more sensitive method of monitoring than blood (*3*). It is difficult to believe therefore that the high levels of mercury in Isaac Newton's hair were not due to mercury poisoning.

I also question Goldwater's etymology of the phrase "as mad as a hatter." I can find no reference to the phrase "as mad as an adder" in any contemporary dictionary or in *Roget's Thesaurus*. Nor does it occur in the *Oxford Dictionary of Proverbs*, which, however, gives the date of the first recorded use of "mad as a hatter" as 1837. Although there are no contemporary references to the use of mercury in the treatment of felt hats before the middle of the 19th century, it