

Third, nowhere in my review do I suggest that scientists are not concerned with animal welfare. I serve on several animal care committees, and I know that many researchers do give serious consideration to the well-being of their experimental subjects and the ethical implications of their research. I cited Morrison's "soul-searching" quotation because I believe it is an eloquent statement of our obligation to consider the legitimate ethical questions raised by our use of animals. I did not mean to imply that Morrison's position on this matter was a response to the prodding of animal activists, and I do not doubt his statement that he has always been concerned with the welfare of experimental animals. My experience, however, has been that the ethical culture of many laboratories is quite different from what it was when I was a graduate student two decades ago. My attitudes about our moral responsibilities toward nonhuman research subjects have changed over the years, and I suspect this is true for many scientists. Morrison and I simply disagree about whether these changes would have come about without the prodding of animal protectionists.

Finally, I am concerned about the polarized nature of the debate over the use of animals in research. Scientists who under-

stand the philosophical, social, and psychological roots of animal protectionism and who recognize the complexity of the ethical issues posed by our interactions with other species are in a better position to argue the case for animal research in the court of public opinion. Partisans on both sides of this issue would do well to heed the advice of ethicist Earl Shelp, who cautioned, "May we have the wisdom, patience, and courage to perceive the limitations of our particular moral visions. . . . And may we have the wisdom, patience, and courage to respect similar limitations that we perceive in the particular moral visions . . . of persons with whom we disagree" [(3), p. 116].

Harold Herzog

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References

1. R. Strand and P. Strand, *The Hijacking of the Humane Movement* (Doral, Wilsonville, OR, 1993), p. 138.
2. *Report to Congress on the Extent and Effects of Domestic and International Terrorism on Animal Enterprises* (Department of Justice, Washington, DC, 1993).
3. E. E. Shelp, in *Taking Sides: Clashing Views of Controversial Bioethical Issues*, C. Levine, Ed. (Dushkin, Guilford, CT, 1989), pp. 114-116.

Pork Barrel Funding an Embarrassment

I would like to point out an error in Christopher Anderson's article "Leading pork opponent hog-tied by cancer project" (News & Comment, 15 Oct., p. 329). The article quite rightly points out a significant problem relating to "pork barrel funding" of science projects that do not go through the usual peer-review mechanism. The article discusses a boron neutron capture therapy (BNCT) program that was initially funded primarily through the Department of Energy, but for which direct congressional funding is now being sought by a university consortium. The University of Washington is incorrectly listed as being a member of this consortium.

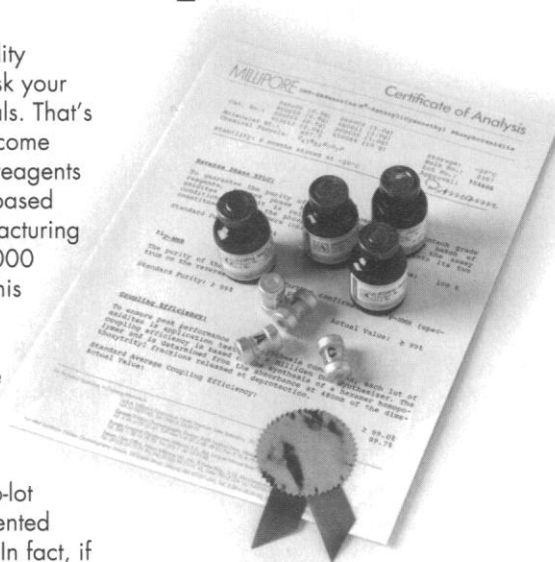
I am coordinating a BNCT-related project at the University of Washington with the ultimate goal of enhancing the effectiveness of a fast neutron radiotherapy beam. Funding for this project is being obtained through the usual peer-reviewed channels, as well as from discretionary University of Washington funds. We were asked to join the BNCT university consortium, but after considerable discussion decided not to. We were concerned about

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attempting to circumvent the peer-review process and thought that participating in this attempt would be a potential embarrassment to our university. Our decision not to participate was made in early 1993 and was communicated then to the consortium; we have not participated in any of the consortium lobbying efforts.

George E. Laramore
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Response: The list published in *Science* was taken from a BNCT consortium membership document that included the University of Washington. The consortium has since amended that. Its ninth member is the Oregon Health Sciences University.

—Christopher Anderson

Safety in Quarks?

Nobelist Carlo Rubbia's proposal (*News & Comment*, 26 Nov., p. 1368) to enter the thorium/U-233 cycle with the aid of accelerators has some charm and perhaps a bit of color. But his statement (quoted indirectly) that "because the thorium cycle produces little plutonium, the risk of weapons proliferation should be minimized" is flawed. The tamped critical mass (as in an implosion weapon) of uranium-233 is less than that of plutonium-239.

Thus, uranium-233 offers the possibility of smaller weapons with lesser amounts of materials than plutonium, actually increasing the risk of weapons proliferation.

Quarks are safer, for the foreseeable future.

Arnold Kramish
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Reston, VA 22090, USA

Corrections and Clarifications

The report "Cure of xenografted human carcinomas by BR96-Doxorubicin immunoconjugates" by P. A. Trail *et al.* (9 July, p. 212), inadvertently omitted a reference to unpublished information about the specifics of the chemical synthesis of BR96-DOX conjugates. This information has now been published [D. Willner *et al.*, *Bioconj. Chem.* 4, 521 (1993)].

The Books Received listing of 26 November (p. 1463) for Thomas F. Lee's *Gene Future: The Promise and Perils of the New Biology* (Plenum, New York, 1993) included a line of information that did not apply to that book. The price given for the book, \$24.95, was correct.

One of the best kept secrets in molecular biology...

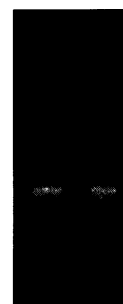
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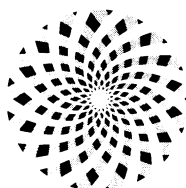
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1. M. Schalling, T.J. Hudson, K.H. Buetow and D.E. Houseman, *Nature Genetics* 4: 135-139, 1993.
2. V. Morell, *Science*; 260: 1422-1423, 1993.

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