Letters

Primates in Biomedical Research

Critical shortages of several species of nonhuman primates used in biomedical research have developed, and it is becoming increasingly important to conserve experimental animals by every possible means. It has been traditional in many research programs using primates to sacrifice the animals at the end of the study and conduct routine necropsies. In fact, reviewers and editors often criticize a study if this is not done. In some investigations, of course, terminal necropsies are an essential part of the study, but in other instances a necropsy is not necessary and should be discouraged so that animals can be saved for breeding programs or alternative research projects.

The Committee on the Conservation of Nonhuman Primates of the Institute of Laboratory Animal Resources, National Academy of Sciences–National Research Council, strongly recommends that the practice of terminal necropsies be evaluated most carefully and avoided whenever possible. However, we urge that all animals that die from unavoidable causes, whether or not related to a specific study, be routinely and completely necropsied to further knowledge of nonhuman primate diseases.

The shortage of night monkeys, marmosets, and several other South American species is particularly acute, and the supply of macaques and baboons is also becoming limited. We believe that several active steps must be taken to improve conservation and management of natural primate populations and their habitats, develop breeding colonies throughout the world, and use primates more efficiently and conservatively in biomedical programs. In the latter area, we believe that substantial savings can be achieved by greater care in the selection of animal models for research, by more thoughtful limitations of the use of primates, by the selection of species other than primates whenever possible, and by selection of male primates rather than females when the sex of the animal is not relevant to the experimental design. When primates are essential for specific studies, the animals should be rescheduled whenever possible for use in compatible programs. Avoiding terminal sacrifice and necropsy, unless absolutely required, is one measure that will conserve significant numbers of primates.

COMMITTEE ON THE CONSERVATION OF NONHUMAN PRIMATES*
Institute of Laboratory Animal Resources, National Academy of Sciences–National Research Council, Washington, D.C. 20418

* Members of the committee include Charles Southwick (chairman), Johns Hopkins University, Baltimore, Md.; John Eisenberg, Smithsonian Institution, Washington, D.C.; Paul Heltne, Johns Hopkins University, Baltimore; Arnold Kaufmann, Center for Disease Control, Atlanta, Ga.; Donald Lindburg, Georgia State University, Atlanta; Gary Moore, Southwest Foundation for Research and Education, San Antonio, Tex.; Thelma Rowell, University of California, Berkeley; Richard Thorington, Smithsonian Institution, Washington, D.C.; John Vandenbergh, North Carolina Department of Mental Health, Raleigh; and Nancy Muckenhirn, Institute of Laboratory Animal Resources, Washington, D.C.

Dredged Material Disposal Guidelines

In the 6 May *Federal Register* (*1*), the Environmental Protection Agency (EPA) and the Corps of Engineers jointly issued for public comment proposed guidelines ". . . applicable to any and all activities involving the discharge of dredged or fill material in navigable waters." The guidelines set forth those factors to be considered by the Corps and the EPA pursuant to the Federal Water Pollution Control Act (as amended in 1972) before dredged or fill material can be discharged lawfully in navigable water. When finalized on or before 26 July, the guideline will provide the legal basis for (i) determining whether dredged material and fill is polluted or unpolluted and (ii) stipulating appropriate disposal sites and conditions. With federal dredging volumes exceeding 350 million cubic yards annually, the environmental importance of effective disposal guidelines is self-evident.

The scientific community should be alerted to (i) the complex nature and comprehensive scope of these guidelines; (ii) the 30 June closing date for the official period of public comment; (iii) the need for EPA to accept comments from competent scientists after the 30 June deadline; and (iv) the importance of substantive analysis and specific comments by members of the scientific community.

As proposed, the guidelines are a mixed bag. For example, the basis for requiring chemical testing and the testing procedures specified are generally straightforward and technically sound, but the section on interpretation of test results is significantly less so. Of greater concern, the section on "Selection of disposal sites" specifies consideration and trade-off decisions involving a nonhierarchical listing of more than 30 separate factors, many of which are not readily comparable, if at all. This section, which reads like the U.S. Tax Code, appears unworkable in the context proposed and requires careful and thorough restructuring. Perhaps this thumbnail review will encourage other scientists to take action in response to the issues at hand.

DAVID D. SMITH
David D. Smith and Associates, Box 929-E, San Diego, California 92109

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Technical Experts and Lawyers

Piehler, Twerski, Weinstein, and Donaher, in their article "Product liability and the technical expert" (20 Dec. 1974, p. 1089), accomplished their prime objective of encouraging closer cooperation between lawyers and technical experts during the entire litigation process. While I agree with the authors' remarks about the relationship between these parties, it might be wise to remind readers that the article describes a special type of litigation.

Product liability cases usually focus on rather narrow engineering points of contention about alleged defects of consumer products. The authors' sample case involving the operation of a solenoid valve in a retractable headlight cover is a typical one. Although the legal doctrine supporting these cases has great social significance, the individual cases normally are very technical. The nature of the case itself governs the relative roles of lawyers and scientists or engineers. The former must take the lead, and the latter must play the supporting role—a situation that does not always promote the desired merging of talents.

Scientists should not accept this as characteristic of all interdisciplinary efforts. Suits under the National Environmental Policy Act of 1969, among others, provide many instances where scientists actively participate from the very beginning and, in fact, sometimes initiate the legal action. In these and similar cases, the broader social issues are apparent and provide greater incentive to work within the legal system, despite any misgivings scientists may have about the adversary process.

Scientists and engineers, as well as lawyers, must be more willing to undertake cooperative pursuits as society's reliance on technology continues to increase. Readers who might desire a more legalistic discussion of technical experts in products liability cases are referred to the original authors' companion article (*1*) in the legal literature.

WILLIAM A. THOMAS
American Bar Foundation,
1155 East 60 Street,
Chicago, Illinois 60637

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1. W. A. Donaher, H. R. Piehler, A. D. Twerski, A. S. Weinstein, *Texas Law Rev.* **52**, 1303 (1974).

As Thomas has indicated, environmental litigation differs from products cases in that the former can sometimes be initiated by scientists and engineers. However, we feel that the technologist's role must be coextensive with that of counsel in both environmental and products litigation once it has been initiated. It is also worth noting that the issue of the placement of a gas tank in an automobile has no less societal significance than the determination of the appropriate emission standard for that same vehicle.

Thomas is unfortunately also correct in his observation that, currently, the focus in individual products cases is often exclusively directed toward narrow engineering points. We have tried to point out, however, that even these technical questions cannot be resolved appropriately if they are not viewed by the expert in terms of their broader societal consequences in addition to their technical detail. An expert must realize that he can characterize a product as defective only after he has balanced risks and utility on the basis of societal as well as technical standards. The litigation of products cases must involve societal considerations at the trial level; otherwise the societal significance of the legal doctrine will be meaningless.

H. R. PIEHLER
Department of Metallurgy and Materials Science and *Program in Engineering and Public Affairs, Carnegie-Mellon University, Pittsburgh, Pennsylvania 15213*, and *Duquesne University School of Law, Pittsburgh 15219*

A. D. TWERSKI
Hofstra University School of Law, Hempstead, New York 11550

A. S. WEINSTEIN
Department of Mechanical Engineering and *Program in Engineering and Public Affairs, Carnegie-Mellon University*, and *Duquesne University School of Law*

W. A. DONAHER
Duquesne University School of Law