

American Association for the Advancement of Science Science serves its readers as a forum for the presentation and discussion of important issues related to the advancement of science, including the presentation of minority or conflicting points of view, rather than by publishing only material on which a consensus has been reached. Accordingly, all articles published in Science-including editorials, news and comment and book reviews—are signed and reflect the individual view of the authors and not official points of view adopted by the AAAS or the institutions with which the authors are affiliated.

Publisher: Bichard S. Nicholson Editor: Daniel E. Koshland, Jr. Deputy Editor: Ellis Rubinstein Managing Editor: Monica M. Bradford International Editor: Alun Anderson Deputy Editors: Philip H. Abelson (Engineering and Applied Sciences); John I. Brauman (Physical Sciences); Thomas R. Cech (Biological Sciences)

## EDITORIAL STAFF

Assistant Managing Editor: Dawn Bennett

Senior Editors: Eleanore Butz, Martha Coleman, Barbara Jasny, Katrina L. Kelner, Phillip D. Szuromi, David F. Voss Associate Editors: R. Brooks Hanson, Pamela J. Hines, Kelly LaMarco, Linda J. Miller, L. Bryan Ray

Letters: Christine Gilbert, *editor*; Steven S. Lapham Book Reviews: Katherine Livingston, *editor*; Teresa Fryberger I. Grossman

Contributing Editor: Lawrence I. Grossm. Chief Production Editor: Ellen E. Murphy Editing Department: Lois Schmitt, *head;* Denise Gipson, Julianne Hunt, Steven Powell

Copy Desk: MaryBeth Branigan, Joi S. Granger, Margaret E.

Gray, Beverly Shields

Production: James Landry, Director; Wendy K. Shank, Manager; Catherine S. Siskos, Assistant Manager; Scherraine Mack, Associate; Linda C. Owens, Macintosh Operator Art: Amy Decker Henry, Director; Julie Cherry, Assistant Director; Diana DeFrancesco, Associate; Holly Bishop, Graphics Assistant

Systems Analyst: William Carter

## NEWS STAFF

Managing News Editor: Colin Norman

Deputy News Editors: Tim Appenzeller, John M. Benditt, Jean Marx

News and Comment/Research News: Ivan Amato, Fave Flam, Troy Gately (copy), Ann Gibbons, David P. Hamilton, Constance Holden, Richard A. Kerr, Eliot Marshall, Joseph Palca, Leslie Roberts, Richard Stone Bureaus: Marcia Barinaga (West Coast), Michelle Hoffman (Northeast), Anne Simon Moffat (Midwest) Contributing Correspondents: Joseph Alper, Jeremy Cherfas, Barry A. Cipra, Robert Crease, Elizabeth Culotta, M. Mitchell Waldrop, Karen Wright

**BUSINESS STAFF** 

Marketing Director: Beth Rosner Circulation Director: Michael Spinella Fulfillment Manager: Marlene Zendell Financial Analyst: Deborah Rivera-Wienhold Classified Advertising Supervisor: Michele Pearl

ADVERTISING REPRESENTATIVES Director: Earl J. Scherago

Traffic Manager: Donna River Traffic Manager (Recruitment): Gwen Canter Advertising Sales Manager: Richard L. Charles Marketing Manager: Herbert L. Burklund Employment Sales Manager: Edward C. Keller Sales: New York, NY 10036: J. Kevin Henebry, 1515 Broadway (212-730-1050); Scotch Plains, NJ 07076: C. Richard Callis, 12 Unami Lane (201-889-4873); Hoffman Hichard Callis, 12 Onami Lane (201-889-4873); Horman Estates, IL 60195: Jack Ryan, 525 W. Higgins Rd. (708-885-8675); San Jose, CA 95112: Bob Brindley, 310 S. 16th St. (408-998-4690); Dorset, VT 05251: Fred W. Dieffenbach, Kent Hill Rd. (802-887-5581); Damascus, MD 20872: Rick Sommer, 11318 Kings Valley Dr. (301-972-9270); U.K., Europe: Nick Jones, +44(0647)52918; Telex 42513; FAX (0647) 52053.

Information for contributors appears on pages 35-37 of the 4 January 1991 issue. Editorial correspondence, including re quests for permission to reprint and reprint orders, should be sent to 1333 H Street, NW, Washington, DC 20005. Telephone: 202-326-6500. London office: 071-494-0062 Advertising correspondence should be sent to Tenth Floor, 1515 Broadway, New York, NY 10036. Telephone 212-730-1050 or WU Telex 968082 SCHERAGO, or FAX 212-382-3725. Subscription/Member Benefits Questions: 202-326 6417. Science: 202-326-6500. Other AAAS Programs: 202-326-6400

## Toxic Chemicals and Toxic Laws

ecently there was consternation when it was discovered that a program intended to help minorities and the underprivileged in Detroit might have to be canceled. The reason was that some of the land on which new buildings were built was thought to contain toxic chemicals and therefore fell under the provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (or Superfund). This collision of two valuable programs illustrates how a program originally heralded to carry out a worthwhile goal can become flawed.

Since 1980, when the Superfund Act was passed by an overwhelming majority in Congress, only 34 of 1245 identified priority sites have been cleaned up while approximately 40% of the money has been spent in trial litigation and administrative oversight. The law was encumbered by provisions for "retroactivity," "joint and several liability," and "strict liability." These legalities have meant that any identifiable dumper, whether or not the dumper acted legally or contributed only 1% of the material dumped at the site, can be liable for 100% of the cost of cleanup. The result has been that anyone so identified will immediately go to court rather than pay exorbitant and unfair charges. The Environmental Protection Agency further compounded the problem by setting a standard demanding that, in many cases, a toxic waste dump should have its soil sufficiently clean so that a well producing potable water could be dug in the middle of it, regardless of whether the land was to be under a factory or out in the desert, where it posed no threat to a surrounding population. To its credit, Superfund has allowed EPA to act expeditiously in emergency removals.

Critics, many of them within the EPA, point out that if the chemical danger level had been scientifically determined, approximately 90% of the truly important sites could have been cleaned up by now and the money wisely spent. However, the program was designed so that Congress initially did not have to raise much money or raise taxes and instead could argue that the program would not cost the taxpayer anything because it "soaked the corporations." That, of course, is a euphemism for saying that consumers paying higher fees for the corporation's products or workers losing jobs because the industry is no longer competitive are not costs. The ultimate irony is that corporations identified as dumpers can often sue municipalities that also used the dump, so that ultimately the taxpayer will pay anyway. Meanwhile, in 1986, despite the horrendous record and the lack of progress, Congress reenacted the law without changing it but actually appropriated additional sums up to \$11 billion.

What needs to be done? First, priority decisions should be taken out of the hands of nonscientists and lawyers and placed in those of scientists who are knowledgeable about toxic agents, who can identify effective targets objectively and who can establish workable priorities for removal of toxic waste.

Second, a significant fraction of the money should be dedicated to research and to new programs that are more cost-effective. There is, for example, an industrial toxics project, known as the 33-50 program, that is designed to reduce toxic waste to a level 33% below 1988 levels by the end of 1992 and to 50% below these levels in 1995. The purpose is to get chemical manufacturers thinking about reducing pollutants and the cost of cleanup when they plan to manufacture a chemical. Today there is no incentive to use environmentally friendly processes if someone else will pay the cleanup cost. Having manufacturers and also consumers pay up front for cleanup costs should encourage prevention. We cannot ignore toxic dumps produced in the past but, by proceeding with a sane and less wasteful program, we should have money left over for future cleanup prevention.

There is a great debate about political correctness in the country at the moment. Most so-called politically correct programs start out like Superfund, with a highly laudable goal. Some advocates try to silence criticism by implying that any critic is against the goal. When the program flounders, those who are against the idea use procedural shortcomings to denounce a worthwhile objective. In the present case, Congress has appropriated \$11 billion to help clean up the environment. Let us agree that that money should be used for the intended purpose, and then decide the most effective way in which to do it. It is time we prevent not only sickness from toxic waste, but also the nausea to taxpayers of a wasteful and inept program.-DANIEL E. KOSHLAND, JR.