

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

Science serves its readers as a forum for the presenta-tion 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 views of the authors and not official points of view adopted by the AAAS or the institutions with which the authors are af-

Editorial Board

1980: RICHARD E. BALZHISER, WALLACE S. BROECK-1980: RICHARD E. BALZHISER, WALLACE S. BROECK-ER, CLEMENT L. MARKERT, FRANK W. PUTNAM, BRY-ANT W. ROSSITER, VERA C. RUBIN, MAXINE F. SINGER, PAUL E. WAGGONER, F. KARL WILLENBROCK 1981: PETER BELL, BRYCE CRAWFORD, JR., E. PETER GEIDUSCHEK, EMIL W. HAURY, SALLY GREGORY KOHLSTEDT, MANCUR OLSON, PETER H. RAVEN, WIL-LIAM P. SLICHTER, FREDERIC G. WORDEN

Publisher

WILLIAM D. CAREY

Editor

PHILIP H. ABELSON

Editorial Staff

Managing Editor ROBERT V. ORMES Assistant Managing Editor John E. Ringle

Rusiness Manager HANS NUSSBAUM Production Editor ELLEN E. MURPHY

News Editor: BARBARA J. CULLITON

News Editor: Barbara J. Culliton
News and Comment: William J. Broad, Luther J.
Carter, Constance Holden, Eliot Marshall, R.
Jeffrey Smith, Marjorie Sun, Nicholas Wade,
John Walsh. Editorial Assistant, Scherraine Mack
Research News: Beverly Karplus Hartline,
Richard A. Kerr, Gina Bari Kolata, Jean L.
Marx, Thomas H. Maugh II, Arthur L. Robinson.
Editorial Assistant, Fannie Groom
Consulting Editor: Allen L. Hammond
Associate Editors: Eleanore Butz, Mary Dorfman, Sylvia Eberhart, Ruth Kulstad
Assistant Editors: Martha Colling. Caltilin Gor-

Assistant Editors: Martha Collins, Caitilin Gordon, Stephen Kepple, Edith Meyers, Lois Schmitt Book Reviews: Katherine Livingston, Editor; Linda Heiserman, Janet Kegg

Letters: Christine Gilbert

Copy Editor: Isabella Bouldin

Production: Nancy Hartnagel, John Baker; Rose
Lowery; Holly Bishop, Eleanor Warner; Mary McDaniel, Jean Rockwood, Leah Ryan, Sharon

Covers, Reprints, and Permissions: Grayce Finger, Editor: Geraldine Crump, Corrine Harris

Guide to Scientific Instruments: RICHARD G. SOMMER Assistant to the Editors: JACK R. ALSIP

Membership Recruitment: GWENDOLYN HUDDLE Member and Subscription Records: ANN RAGLAND EDITORIAL CORRESPONDENCE: 1515 Massachusetts Ave., NW, Washington, D.C. 20005. Area code 202. General Editorial Office, 467-4350; Book Reviews, 467-4367; Guide to Scientific Instruments, 467-4480; News and Comment, 467-4430; Reprints and Permissions, 467-4483; Research News, 467-4321. Cable: missions, 467-4483; Research News, 467-4321. Cable: Advancesci, Washington. For "Instructions for Contribwrite the editorial office or see page xi, Science,

BUSINESS CORRESPONDENCE: Area Code 202. Membership and Subscriptions: 467-4417.

Advertising Representatives

Director: EARL J. SCHERAGO Production Manager: GINA REILLY Advertising Sales Manager: RICHARD L. CHARLES

Advertising Sales Manager: RICHARD L. CHARLES Marketing Manager: HERBERT L. BURKLUND Sales: NEW YORK, N.Y. 10036: Steve Hamburger, 1515 Broadway (212-730-1050); SCOTCH PLAINS, N.J. 07076: C. Richard Callis, 12 Unami Lane (201-889-4873); CHICAGO, ILL. 60611: Jack Ryan, Room 2107, 919 N. Michigan Ave. (312-337-4973); BEVERLY HILLS, CALIF. 90211: Winn Nance, 111 N. La Cienega Blvd. (213-657-2772); DORSET, VT. 05251: Fred W. Dieffenbach, Kent Hill Rd. (802-867-5581).

ADVERTISING CORRESPONDENCE: Tenth floor, 1515 Broadway New York N.Y. 10036, Phone: 212-1515 Broadway New

1515 Broadway, New York, N.Y. 10036. Phone: 212-730-1050.

Environmental Regulation

A decade ago, the Environmental Protection Agency (EPA) was established at the height of popular support for environmental action. The mission of the new agency was to protect and enhance the environment to the fullest extent possible under laws enacted by Congress. In the intervening years, obvious sources of pollution have been identified and remedies initiated. But we have entered a more difficult phase of environmental concerns. Refinements in research and monitoring have made it possible to detect pollutants at incredibly low concentrations. The observations made thus far suggest that many chemicals (some of them suspected to be carcinogenic) may be ubiquitous, usually in very low concentrations. Nevertheless, even the lowest concentrations continue to be a matter of concern to some.

These discoveries have complicated the development of environmental regulations to comply with stringent legislative mandates. Other factors have made the implementation of such regulations increasingly difficult. Congress has been accused of passing laws with unrealistic and conflicting requirements. It has been further accused of failing to appropriate the resources necessary to implement these laws. The result, according to a former deputy administrator, is that EPA is severely overloaded and cannot meet its responsibilities.

Environmental groups urge the agency to enforce strict controls. EPA's detractors argue that regulations are established arbitrarily to meet legislative deadlines and are based on inadequate scientific and technical information. Until recently, there has been little consideration of the economic cost and social impact of environmental protection. The implementation of regulations has become characterized by adversary relationships that inhibit objective use of the best scientific data available and the development of technically optimal solutions.

Remedies have been attempted. In 1977, the National Academy of Sciences undertook a study of decision-making at EPA; some of its recommendations have been implemented. President Carter issued an Executive Order in 1978 instituting specific steps to improve regulation. The General Accounting Office published a report in 1979 on improving the use of scientific and technical information at EPA. There are currently at least three bills under consideration by Congress on regulatory reform and risk assessment.

Each of these measures deals with one or another aspect of environmental regulation; none, however, examines the full range of regulatory activities. What is needed at this time is a comprehensive reexamination of the development and implementation of environmental regulations, based on the knowledge and experience that have been acquired in recent years.

A national commission should be established to develop a consensus among all concerned parties on how environmental protection can best be pursued in the next two decades. The commission should be composed of wise and discerning representatives from each sector involved in regulatory activities—Congress, environmental organizations, industry, the scientific community, EPA administration, and the legal profession. It should examine regulatory activities—from legislation through implementation—by a variety of means, including regional and national conferences. It should make recommendations to Congress for a new, more effective means of achieving environmental protection in which all parties can cooperate.

Public attitudes toward environmental regulation are shifting; much of the progress we have made in environmental protection could be lost. One function of the commission would be to provide a measured response to the current problems of achieving environmental protection. It would provide a forum where both risks and costs could be examined in an open and thoughtful manner. We have learned much about environmental protection in the last decade. It is time to apply that experience and knowledge to the continued improvement of public well-being.—RICHARD C. ATKINSON, Chancellor, University of California, San Diego, La Jolla 92037