

823 This Week in *Science*

## Editorial

825 Scientists' Roles in AIDS Control: D. JENNESS

## Letters

829 High Accuracy in Physics: D. G. McDONALD ■ U.S. Intellectual Resources: D. F. MAGEE ■ Methylene Geometry: E. WASSERMAN and H. F. SCHAEFER III ■ Mental Illness: H. E. YUKER

## News & Comment

831 Proposal to Ban Mobile Missiles Favors Targeting Over Arms Control

833 U. S.—Soviet Exchanges—Redefining Coexistence

835 Nuclear Waste Program Faces Political Burial

837 *Briefing*: Illinois Wipes Out State Budget for Psychiatric Research ■ Forest Death Showing Up in the United States ■ Chernobyl-Type Accident Deemed Unlikely at Hanford Plant ■ Senate Amendment Seeks Curb on Pork Barrel Funding ■ Biotech Field Test Halted by State Court

## Research News

839 Youth Suicide: New Research Focuses on a Growing Social Problem

841 *Briefing*: Astronomers Find Their First Embryonic Star

842 Spotting the Atoms in Grain Boundaries

## Articles

849 Neuronal Circuits: An Evolutionary Perspective: J. P. C. DUMONT and R. M. ROBERTSON

## Research Articles

853 The Complete Primary Structure of Protein Kinase C—the Major Phorbol Ester Receptor: P. J. PARKER, L. COUSSENS, N. TOTTY, L. RHEE, S. YOUNG, E. CHEN, S. STABEL, M. D. WATERFIELD, A. ULLRICH

859 Multiple, Distinct Forms of Bovine and Human Protein Kinase C Suggest Diversity in Cellular Signaling Pathways: L. COUSSENS, P. J. PARKER, L. RHEE, T. L. YANG-FENG, E. CHEN, M. D. WATERFIELD, U. FRANCKE, A. ULLRICH

■ SCIENCE is published weekly on Friday, except the last week in December, and with a plus issue in May by the American Association for the Advancement of Science, 1333 H Street, NW, Washington, DC 20005. Second-class postage (publication No. 484460) paid at Washington, DC, and at an additional entry. Now combined with *The Scientific Monthly*® Copyright © 1986 by the American Association for the Advancement of Science. The title SCIENCE is a registered trademark of the AAAS. Domestic individual membership and subscription (51 issues): \$65. Domestic institutional subscription (51 issues): \$98. Foreign postage extra: Canada \$24, other (surface mail) \$27, air-surface via Amsterdam \$65. First class, airmail, school-year, and student rates on request. Single copies \$2.50 (\$3 by mail); back issues \$4 (\$4.50 by mail); Biotechnology issue, \$5.50 (\$6 by mail); classroom rates on request; Guide to Biotechnology Products and Instruments \$16 (\$17 by mail). **Change of address:** allow 6 weeks, giving old and new addresses and seven-digit account number. Authorization to photocopy material for internal or personal use under circumstances not falling within the fair use provisions of the Copyright Act is granted by AAAS to libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that the base fee of \$1 per copy plus \$0.10 per page is paid directly to CCC, 21 Congress Street, Salem, Massachusetts 01970. The identification code for *Science* is 0036-8075/83 \$1 + .10. **Postmaster:** Send Form 3579 to *Science*, 1333 H Street, NW, Washington, DC 20005. *Science* is indexed in the *Reader's Guide to Periodical Literature* and in several specialized indexes.

■ The American Association for the Advancement of Science was founded in 1848 and incorporated in 1874. Its objects are to further the work of scientists, to facilitate cooperation among them, to foster scientific freedom and responsibility, to improve the effectiveness of science in the promotion of human welfare, and to increase public understanding and appreciation of the importance and promise of the methods of science in human progress.



**COVER** Experimental watershed no. 5 in the Hubbard Brook Experimental Forest, in central New Hampshire. This watershed was commercially whole-tree harvested in 1983. Experimental watershed no. 6, the location of a continuous 25-year record of precipitation and stream water chemistry, is to the immediate left of watershed no 5. Massive disturbances, such as whole-tree harvesting, set in motion a series of biogeochemical responses that shape both the long- and short-term behavior of the recovering landscape. See page 867. [Ashton Hallett]

## Reports

- 867 Transport and Loss of Nitrous Oxide in Soil Water After Forest Clear-Cutting: W. B. BOWDEN and F. H. BORMANN
- 869 Placers of Cosmic Dust in the Blue Ice Lakes of Greenland: M. MAURETTE, C. HAMMER, D. E. BROWNLIE, N. REEH, H. H. THOMSEN
- 872 Dynamic Atomic-Level Rearrangements in Small Gold Particles: D. J. SMITH, A. K. PETFORD-LONG, L. R. WALLENBERG, J.-O. BOVIN
- 875 Observations of Pentagonally Twinned Precipitate Needles of Germanium in Aluminum: U. DAHMEN and K. H. WESTMACOTT
- 876 A Fossil Grass (Gramineae: Chloridoideae) from the Miocene with Kranz Anatomy: J. R. THOMASSON, M. E. NELSON, R. J. ZAKRZEWSKI
- 879 Structure and Diversity of the Human T-Cell Receptor  $\beta$ -Chain Variable Region Genes: J. P. TILLINGHAST, M. A. BEHLKE, D. Y. LOH
- 883 Replication of the B19 Parvovirus in Human Bone Marrow Cell Cultures: K. OZAWA, G. KURTZMAN, N. YOUNG
- 886 Calcium Rises Abruptly and Briefly Throughout the Cell at the Onset of Anaphase: M. POENIE, J. ALDERTON, R. ŠTEINHARDT, R. TSIEN
- 889 Upstream Operators Enhance Repression of the *lac* Promoter: M. C. MOSSING and M. T. RECORD, JR.

## Products & Materials

- 893 Incubation Hood ■ Cell and Tissue Adhesive ■ Research Project Database ■ Supercritical Fluid Chromatography ■ Custom DNA and Peptide Synthesis ■ Automated Pipettor ■ Literature

## Book Reviews

- 896 The Dilemmas of an Upright Man, reviewed by D. C. CASSIDY ■ The Photochemistry of Atmospheres, R. J. CICERONE ■ Hope for a New Neurology, J. B. MARTIN ■ Transport and Diffusion across Cell Membranes, C. TANFORD ■ Books Received

### Board of Directors

Gerard Piel  
*Retiring President,  
Chairman*

Lawrence Bogorad  
*President*

Sheila E. Widnall  
*President-elect*

Robert McC. Adams  
Robert W. Berliner  
Floyd E. Bloom  
Mary E. Clutter  
Mildred S. Dresselhaus  
Donald N. Langenberg  
Dorothy Nelkin  
Linda S. Wilson

William T. Golden  
*Treasurer*

William D. Carey  
*Executive Officer*

### Editorial Board

David Baltimore  
William F. Brinkman  
Ansley J. Coale  
Joseph L. Goldstein  
James D. Idol, Jr.  
Leon Knopoff  
Seymour Lipset  
Walter Massey  
Oliver E. Nelson  
Allen Newell  
Ruth Patrick  
David V. Ragone  
Vera C. Rubin  
Howard E. Simmons  
Solomon H. Snyder  
Robert M. Solow

### Board of Reviewing Editors

Qais Al-Awqati  
James P. Allison  
Luis W. Alvarez  
Don L. Anderson  
C. Paul Bianchi  
Elizabeth H. Blackburn  
Floyd E. Bloom  
Charles R. Cantor  
James H. Clark  
Bruce F. Eldridge  
Stanley Falkow  
Theodore H. Geballe  
Roger I. M. Glass

Stephen P. Goff  
Robert B. Goldberg  
Patricia S. Goldman-Rakic  
Corey S. Goodman  
Richard M. Held  
Gloria Heppner  
Eric F. Johnson  
Konrad B. Krauskopf  
Karl L. Magleby  
Joseph B. Martin  
John C. McGiff  
Alton Meister  
Mortimer Mishkin  
Peter Olson  
Gordon H. Orians  
John S. Pearce  
Yeshayau Pocker  
Jean Paul Revel

Frederic M. Richards  
James E. Rothman  
Thomas C. Schelling  
Ronald H. Schwartz  
Stephen M. Schwartz  
Otto T. Solbrig  
Robert T. N. Tjian  
Virginia Trimble  
Geerat J. Vermeij  
Martin G. Weigert  
Irving L. Weissman  
George M. Whitesides  
Owen N. Witte  
William B. Wood  
Harriet Zuckerman

# Science

**233 (4766)**

*Science* **233** (4766), 823-898.

ARTICLE TOOLS

<http://science.sciencemag.org/content/233/4766>

PERMISSIONS

<http://www.sciencemag.org/help/reprints-and-permissions>

Use of this article is subject to the [Terms of Service](#)

---

*Science* (print ISSN 0036-8075; online ISSN 1095-9203) is published by the American Association for the Advancement of Science, 1200 New York Avenue NW, Washington, DC 20005. 2017 © The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works. The title *Science* is a registered trademark of AAAS.