

571 This Week in *Science*

Editorial

573 The Process of Publication

Policy Forum

574 On Radiation, Paradigms, and Hormesis: L. A. SAGAN

575 Are Radiation-Induced Effects Hormetic?: S. WOLFF

Perspective

578 AIDS AND IV Drug Use: D. C. DES JARLAIS, AND S. R. FRIEDMAN

Letters

581 "Electric" Airliners: R. ALIZART; G. A. FULFORD ■ Animal Experimentation:
B. P. REINES; N. D. BARNARD ■ Shortage of Scientists: R. C. ATKINSON

News & Comment

588 Facing a Final Exam at Neptune

590 Making Transgenic Mice: Is It Really That Easy?

592 Computer Engineer Turns Entrepreneur-in-Exile ■ Biologist Monitors Human Rights

593 Estrogen Use Linked to Breast Cancer
New Rules on Misconduct

Research News

594 Keeping Up with the Jonezawas

595 How the Grinch Stole Mathematics

596 Supercomputer Market Needs Supersalesmen

598 NCI Team Remodels Key AIDS Virus Enzyme

599 *Briefings*: Bromley Confirmed; Hill Awaits Deputies ■ AZT for ARC ■ Plugging into the Pacific Ocean ■ Roe Plans Hearing on Fate of NIH Monkeys ■ Stars and the Greenhouse ■ Sex Secrets Safe

Articles

600 The Growth of Japanese Science and Technology: F. NARIN AND J. D. FRAME

605 Ocular Dominance Column Development: Analysis and Simulation:
K. D. MILLER, J. B. KELLER, M. P. STRYKER

Research Articles

616 Conserved Folding in Retroviral Proteases: Crystal Structure of a Synthetic HIV-1 Protease: A. WLODAWER, M. MILLER, M. JASKÓLSKI, B. K. SATHYANARAYANA, E. BALDWIN, I. T. WEBER, L. M. SELK, L. CLAWSON *et al.*

Reports

622 Surface Discharges on Natural Dielectrics in the Solar System: H. CAMPINS AND E. P. KRIDER

- **SCIENCE** is published weekly on Friday, except the last week in December, and with an extra issue in February 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 © 1989 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): \$75. Domestic institutional subscription (51 issues): \$120. Foreign postage extra: Canada \$46, other (surface mail) \$46, air mail via Amsterdam \$85. First class, airmail, school-year, and student rates on request. **Single copy sales:** Current issue, \$3.50; back issues, \$5.00; Biotechnology issue, \$6.00 (for postage and handling, add per copy \$0.50 U.S., \$1.00 all foreign); Guide to Biotechnology Products and Instruments, \$18 (for postage and handling add per copy \$1.00 U.S., \$1.50 Canada, \$2.00 other foreign). Bulk rates on request. **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, 27 Congress Street, Salem, Massachusetts 01970. The identification code for *Science* is 0036-8075/83 \$1 + .10. **Change of address:** allow 6 weeks, giving old and new addresses and 11-digit account number. **Postmaster:** Send Form 3579 to *Science*, P.O. Box 1722, Riverton, NJ 08077. *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 Three-dimensional structure of a single zinc finger domain showing backbone fold, cysteine and histidine ligands, and zinc atom, determined by the use of distance and dihedral angle constraints derived from nuclear magnetic resonance spectroscopy. See page 635. [Illustration by Michael Pique, Research Institute of Scripps Clinic, computed on Ardent Titan and Sun TAAC-1 with software from Ray Tracing Corporation and Sun Microsystems]

- 624 Nonequilibrium Molecular Motion in a Hypersonic Shock Wave: G. PHAM-VAN-DIEP, D. ERWIN, E. P. MUNTZ
- 626 Synthesis of Organic Salts with Large Second-Order Optical Nonlinearities: S. R. MARDER, J. W. PERRY, W. P. SCHAEFER
- 628 Scandinavian, Siberian, and Arctic Ocean Glaciation: Effect of Holocene Atmospheric CO₂ Variations: D. R. LINDSTROM AND D. R. MACAYEAL
- 631 Neural Cadherin: Role in Selective Cell-Cell Adhesion: S. MIYATANI, K. SHIMAMURA, M. HATTA, A. NAGAFUCHI, A. NOSE, M. MATSUNAGA, K. HATTA, M. TAKEICHI
- 635 Three-Dimensional Solution Structure of a Single Zinc Finger DNA-Binding Domain: M. S. LEE, G. P. GIPPERT, K. V. SOMAN, D. A. CASE, P. E. WRIGHT
- 638 Attraction of the Parasitic Mite *Varroa* to the Drone Larvae of Honey Bees by Simple Aliphatic Esters: Y. LE CONTE, G. ARNOLD, J. TROUILLER, C. MASSON, B. CHAPPE, G. OURISSON
- 640 Identification of a Zinc Finger Protein That Binds to the Sterol Regulatory Element: T. B. RAJAVASHISTH, A. K. TAYLOR, A. ANDALIBI, K. L. SVENSON, A. J. LUSIS
- 643 The Product of the *mos* Proto-Oncogene as a Candidate "Initiator" for Oocyte Maturation: N. SAGATA, I. DAAR, M. OSKARSSON, S. D. SHOWALTER, G. F. VANDE WOUDE
- 646 Preferential Heterodimer Formation by Isolated Leucine Zippers from Fos and Jun: E. K. O'SHEA, R. RUTKOWSKI, W. F. STAFFORD III, P. S. KIM
- 648 NMDA Antagonists Differentiate Epileptogenesis from Seizure Expression in an in Vitro Model: S. F. STASHEFF, W. W. ANDERSON, S. CLARK, W. A. WILSON
- 651 A Novel mRNA of the A4 Amyloid Precursor Gene Coding for a Possibly Secreted Protein: F. DE SAUVAGE AND J.-N. OCTAVE

Book Reviews

- 654 E. W. R. Steacie and Science in Canada: reviewed by: J. L. GRANATSTEIN ■ The Mathematical Tourist AND Innumeracy, L. LOEVINGER ■ Arguments on Evolution, D. JABLONSKI ■ Some Other Books of Interest ■ Books Received

Products & Materials

- 658 Microplate Washer ■ Custom Peptide Synthesis ■ Antibodies ■ CD-ROM Chromatography Database ■ Spatial Imaging of Radioactive Samples ■ Incubator for Blotting ■ Literature

Board of Directors

Walter E. Massey
Retiring President,
Chairman

Richard C. Atkinson
President

Donald N. Langenberg
President-elect

Mary Ellen Avery
Francisco J. Ayala
Floyd E. Bloom
Mary E. Clutter
Eugene H. Cota-Robles
Joseph G. Gavin, Jr.
John H. Gibbons
Beatrix A. Hamburg
William T. Golden
Treasurer
Richard S. Nicholson
Executive Officer

Editorial Board

Elizabeth E. Bailey
David Baltimore
William F. Brinkman
E. Margaret Burbidge
Philip E. Converse
Joseph L. Goldstein
Mary L. Good
F. Clark Howell
James D. Idol, Jr.
Leon Knopoff
Oliver E. Nelson
Yasutomi Nishizuka
Helen M. Ranney
David M. Raup
Howard A. Schneiderman
Larry L. Smarr
Robert M. Solow
James D. Watson

Board of Reviewing Editors

John Abelson
Qais Al-Awqati
Don L. Anderson
Stephen J. Benkovic
Floyd E. Bloom
Henry R. Bourne
James J. Bull
Kathryn Calame
Charles R. Cantor
Ralph J. Cicerone
John M. Coffin
Robert Dorfman
Bruce F. Eldridge
Paul T. Englund
Fredric S. Fay
Theodore H. Geballe

Roger I. M. Glass
Stephen P. Goff
Robert B. Goldberg
Corey S. Goodman
Jack Gorski
Stephen J. Gould
Richard M. Held
Gloria Heppner
Eric F. Johnson
Konrad B. Krauskopf
Charles S. Levings III
Richard Losick
Karl L. Magleby
Philippa Marrack
Joseph B. Martin
John C. McGiff
Mortimer Mishkin
Carl O. Pabo

Yeshayau Pocker
Michael I. Posner
Dennis A. Powers
Russell Ross
James E. Rothman
Erkki Ruoslahti
Ronald H. Schwartz
Vernon L. Smith
Robert T. N. Tjian
Virginia Trimble
Emil R. Unanue
Geerat J. Vermeij
Bert Vogelstein
Harold Weintraub
Irving L. Weissman
George M. Whitesides
Owen N. Witte
William B. Wood

Science

245 (4918)

Science **245** (4918), 571-658.

ARTICLE TOOLS

<http://science.sciencemag.org/content/245/4918>

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. The title *Science* is a registered trademark of AAAS.

Copyright © 1989 The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works.