

703 This Week in *Science*

Editorial

705 Science at the Four-Year and Master's Universities

Perspective

707 U.S. Nuclear Power in the Next Twenty Years: B. I. SPINRAD

Letters

713 The Meadowcroft Rockshelter: J. M. ADOVASIO AND R. C. CARLISLE ■ Brainwave Counting: W. A. CONIGLIO ■ Flora Project: M. S. STRAUSS

News & Comment

717 AIDS and Drug Abuse: No Quick Fix  
719 ARS Prodded into the Open  
720 Anglo-French Nuclear Missile Under Study  
722 *Briefing*: Army Releases Report on Biowarfare Lab ■ Investor Takes Major Position in BioTechnica ■ Bullish on Genentech ■ Beagle Theft at Irvine ■ Researcher Held in Kenya  
723 Patent Claim Buildup Haunts Biotechnology  
724 NIH Scientists Balk at Random Drug Tests

Research News

725 Academy Backs Genome Project  
727 Pushing Back the Redshift Limit  
729 Was There a Prelude to the Dinosaurs' Demise?  
730 Superconductors Hotter Yet

Articles

737 Causes of the Liability Insurance Crisis: S. HARRINGTON AND ROBERT E. LITAN  
742 Diode Laser-Pumped Solid-State Lasers: R. L. BYER  
748 Molecular Phylogeny of the Animal Kingdom: K. G. FIELD, G. J. OLSEN, D. J. LANE, S. J. GIOVANNONI, M. T. GHISELIN, E. C. RAFF, N. R. PACE, R. RAFF

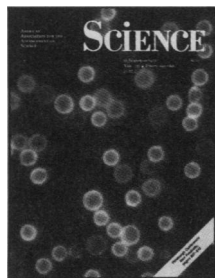
Research Articles

753 Glycosyl-Phosphatidylinositol Moiety That Anchors *Trypanosoma brucei* Variant Surface Glycoprotein to the Membrane: M. A. J. FERGUSON, S. W. HOMANS, R. A. DWEK, T. W. RADEMACHER

Reports

760 New Asymptotics for Old Wave Equations: J. R. KLAUDER  
762 Biologically Effective Ultraviolet Radiation: Surface Measurements in the United States, 1974 to 1985: J. SCOTTO, G. COTTON, F. URBACH, D. BERGER, T. FEARS  
764 Capture of Atmospheric Ammonium by Grassland Canopies: G. W. HEIL, M. J. A. WERGER, W. DE MOL, D. VAN DAM, B. HEIJNE

- 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 © 1988 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 \$32, other (surface mail) \$27, air-surface via Amsterdam \$65. First class, airmail, school-year, and student rates on request. Single copies \$3.00 (\$3.50 by mail); back issues \$4.50 (\$5.00 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** Subsets of developing T lymphocytes from a mouse, stained with fluorescently labeled monoclonal antibodies against the membrane glycoproteins, CD4 and CD8 ( $\times 2800$ ). Helper T cells (orange, CD4<sup>+</sup>), cytotoxic and suppressor T cells (green, CD8<sup>+</sup>), and immature blast cells and their progeny (yellow, CD4<sup>+</sup> and CD8<sup>+</sup>) each exhibit a characteristic pattern of ion-channel expression. See page 771. [Richard S. Lewis, University of California, Irvine 92717]

- 766 Effect of Neonatal Handling on Age-Related Impairments Associated with the Hippocampus: M. J. MEANEY, D. H. AITKEN, C. VAN BERKEL, S. BHATNAGAR, R. M. SAPOLSKY
- 769 A Newly Defined Property of Somatotropin: Priming of Macrophages for Production of Superoxide Anion: C. K. EDWARDS III, S. M. GHIASSUDIN, J. M. SCHEPPER, L. M. YUNGER, K. W. KELLEY
- 771 Subset-Specific Expression of Potassium Channels in Developing Murine T Lymphocytes: R. S. LEWIS AND M. D. CAHALAN
- 775 Expression of a Distinctive *BCR-ABL* Oncogene in Ph<sup>1</sup>-Positive Acute Lymphocytic Leukemia (ALL): S. S. CLARK, J. MCLAUGHLIN, M. TIMMONS, A. M. PENDERGAST, Y. BEN-NERIAH, L. W. DOW, W. CRIST, *et al.*
- 778 Effects of Intracellular Free Magnesium on Calcium Current in Isolated Cardiac Myocytes: R. E. WHITE AND H. C. HARTZELL
- 780 A Fossil Reptile Embryo from the Middle Triassic of the Alps: P. M. SANDER
- 783 Mesoderm Induction in Amphibians: The Role of TGF- $\beta$ 2-Like Factors: F. ROSA, A. B. ROBERTS, D. DANIELPOUR, L. L. DART, M. B. SPORN, I. B. DAWID
- 786 One Factor Recognizes the Liver-Specific Enhancers in  $\alpha$ <sub>1</sub>-Antitrypsin and Transthyretin Genes: D. R. GRAYSON, R. H. COSTA, K. G. XANTHOPOULOS, J. E. DARNELL

## Technical Comments

- 789 Elevated D<sub>2</sub> Dopamine Receptors in Drug-Naïve Schizophrenics: B. R. ZEEBERG, R. E. GIBSON, R. C. REBA; D. F. WONG, A. GJEDDE, H. M. WAGNER, JR., R. F. DANNALS, J. M. LINKS, L. E. TUNE, G. D. PEARLSON

## Book Reviews

- 800 The Fall of the Bell System, *reviewed by* W. L. BALDWIN ■ Medical Science and Medical Industry, J. W. SERVOS ■ Sea Surface Studies, O. H. PILKEY ■ Interstellar Processes, Physical Processes in Interstellar Clouds, J. SILK ■ Books Received

## Products & Materials

- 807 Centrifugal Partition Chromatography System ■ Spectroscopy Software ■ LC Simulation Software ■ Integrator ■ Data-Acquisition System ■ HPLC Columns ■ Spectrophotometer Cell ■ Supercritical Fluid Chromatograph ■ Gas Chromatograph ■ Gas Cylinder Depletion Guard ■ Spectrometer ■ Column Packings ■ Atomic Absorption Spectrometers ■ Chemical Word-Processing Software ■ Diffractometer ■ Ultraviolet-Visible Spectrophotometer ■ Atomic Absorption Spectrometer ■ Automated Solid-Phase Sample Preparation ■ Supercritical Fluid Chromatograph ■ FTIR Spectrometer ■ ChemStation-Computer Communications ■ Data Collection Program ■ Literature

### Board of Directors

Lawrence Bogorad  
*Retiring President,*  
*Chairman*

Sheila E. Widnall  
*President*

Walter E. Massey  
*President-elect*

Robert McC. Adams  
Floyd E. Bloom  
Mary E. Clutter  
Mildred S. Dresselhaus  
Beatrix A. Hamburg  
Donald N. Langenberg  
Frank von Hippel  
Linda S. Wilson  
William T. Golden  
*Treasurer*  
Alvin W. Trivelpiece  
*Executive Officer*

### Editorial Board

Elizabeth E. Bailey  
David Baltimore  
William F. Brinkman  
Philip E. Converse  
Joseph L. Goldstein  
F. Clark Howell  
James D. Idol, Jr.  
Leon Knopoff  
Oliver E. Nelson  
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  
James J. Bull  
Charles R. Cantor  
Ralph J. Cicerone  
John M. Coffin  
Bruce F. Eldridge  
Paul T. Englund  
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  
Richard Losick  
Karl L. Magleby  
Philippa Marrack  
Joseph B. Martin  
John C. McGiff  
Mortimer Mishkin  
Jiri Novotny  
Gordon H. Orians

Carl O. Pabo  
John S. Pearce  
Yeshayau Pocker  
Jean Paul Revel  
James E. Rothman  
Daniel V. Santi  
Thomas C. Schelling  
Ronald H. Schwartz  
Otto T. Solbrig  
Robert T. N. Tjian  
Virginia Trimble  
Geerat J. Vermeij  
Harold Weintraub  
Irving L. Weissman  
George M. Whitesides  
Owen N. Witte  
William B. Wood

# Science

**239 (4841)**

*Science* **239** (4841), 703-810.

ARTICLE TOOLS

<http://science.sciencemag.org/content/239/4841>

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.