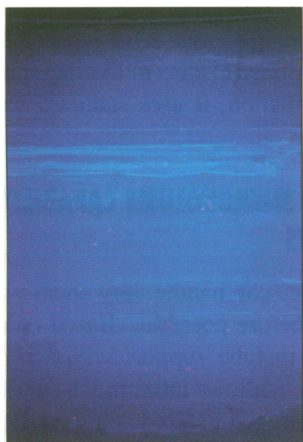


SCIENCE



Climate change in the last Ice Age
890 & 962

POLICY FORUM

The Stalemate in Food and Agricultural Research, Teaching, and Extension **881**
J. H. Meyer

NEWS & COMMENT

Measure for Measure in Science **884**
Citation Rankings: No Technical Knockout?

Institute of Medicine Elects New Members **886**

Research Community Swats Grasshopper Control Trial **887**

NIH: Glossy Strategic Plan Hits the Streets **888**

Women at NIH—Task Force: Level the Playing Field **888**

Yet Another Science Minister for Germany **889**

RESEARCH NEWS

How Ice Age Climate Got the Shakes **890**

Old Feuds, New Finds Mark Anthropologists' Meeting **892**



FRONTIERS IN BIOTECHNOLOGY

NEWS REPORTS

Biotech Gets a Grip on Cell Adhesion • **906**
Biotech Sails Into Heavy Financial Seas •
Going Back to the Future With Small Synthetic Compounds • Stand and Deliver: Getting Peptide Drugs Into the Body • New Startups Move in As Gene Therapy Goes Commercial

PERSPECTIVES

Molecular Advances in Cardiovascular Biology **916**
K. R. Chien

Neuroscience: The Remembrance of Blinks Past **894**

Forensic Science: Botanical Witness for the Prosecution **894**

Cold Fusion: Pons and Fleischmann Redux? **895**

RESEARCH ARTICLE

Regulation of V(D)J Recombination Activator Protein RAG-2 by Phosphorylation
W.-C. Lin and S. Desiderio **953**

DEPARTMENTS

THIS WEEK IN SCIENCE **873**

EDITORIAL **875**
The Human Cornucopia

LETTERS **877**
"MegaYAC" Library: G. A. Evans • Interdisciplinary Symposia: B. Zuckerman • Funding for Gene Therapy: B. A. Chabner and R. Levy • Biosphere 2: A New Kind of Science: E. P. Odum • Judging Science: J. A. Gold, M. J. Zaremski, E. R. Lev, D. H. Shefrin; S. H. Swan • Multidrug Resistance-Associated Protein: Sequence Correction: S. P. C. Cole and R. G. Deeley • Knowing It All: R. N. Bracewell

SCIENCESCOPE **883**

RANDOM SAMPLES **896**
Controversial Head Hangs on at WHO • Using Plants as Prospectors • Whale Alarm, etc.

BOOK REVIEWS **1008**
Comparable Worth, reviewed by J. Acker • *Growth, Maturation, and Body Composition*, R. M. Malina • *Macromolecular Crystallography with Synchrotron Radiation*, J. P. Glusker • *Morphogenesis*, P. B. Armstrong • Vignettes • Books Received

PRODUCTS & MATERIALS **1013**

AAAS Board of Directors

Board of Reviewing Editors

F. Sherwood Rowland
Retiring President,
Chairman
Eloise E. Clark
President
Francisco J. Ayala
President-elect

Alan Schriesheim
Jean'ne M. Shreeve
Chang-Lin Tien
Warren M. Washington
Nancy S. Wexler

William T. Golden
Treasurer
Richard S. Nicholson
Executive Officer

John Abelson
Frederick W. Alt
Don L. Anderson
Stephen J. Benkovic
David E. Bloom
Floyd E. Bloom
Henry R. Bourne
James J. Bull
Kathryn Calame
C. Thomas Caskey
Dennis W. Choi

John M. Coffin
Bruce F. Eldridge
Paul T. Englund
Richard G. Fairbanks
Douglas T. Fearon
Harry A. Fozzard
Victor R. Fuchs
Theodore H. Geballe
Margaret J. Geller
John C. Gerhart
Roger I. M. Glass

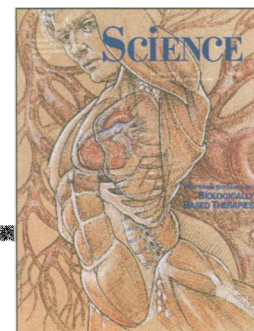
Stephen P. Goff
Corey S. Goodman
Stephen J. Gould
Ira Herskowitz
Eric F. Johnson
Stephen M. Kosslyn
Michael LaBarbera
Charles S. Levings III
Harvey F. Lodish
Richard Losick
Anthony R. Means

Mortimer Mishkin
Roger A. Nicoll
William H. Orme-Johnson III
Stuart L. Pimm
Yeshayahu Pocker
Dennis A. Powers
Ralph S. Quatranio
V. Ramanathan
Douglas C. Rees
Erkki Ruoslahti
Ronald H. Schwartz

Terrence J. Sejnowski
Thomas A. Steitz
Richard F. Thompson
Robert T. N. Tjian
Emil R. Unanue
Geerat J. Vermeij
Bert Vogelstein
Harold Weintraub
Zena Werb
George M. Whitesides
Owen N. Witte
Keith Yamamoto

The more basic biology we learn, the more approaches we have for intervention into disease processes. As this special issue on biologically based therapies shows, the knowledge gained from basic investigations of physiology, cell networks, cell biology, and

molecular genetics has afforded us opportunities to tap the human body's own processes in promoting health. See pages 906 to 944. [Illustration: Vincent Perez, Alameda, California]



New Intracellular Targets for Therapeutic Drug Design J. S. Brugge	918
ARTICLES	
Tissue Engineering R. Langer and J. P. Vacanti	920
The Basic Science of Gene Therapy R. C. Mulligan	926
New Challenges in Human in Vitro Fertilization R. M. L. Winston and A. H. Handyside	932
Identifying Strategies for Immune Intervention A. Lanzavecchia	937

Detection of HIV-1 DNA and Messenger RNA in Individual Cells by PCR-Driven in Situ Hybridization and Flow Cytometry B. K. Patterson, M. Till, P. Otto, C. Goolsby, M. R. Furtado, L. J. McBride, S. M. Wolinsky	976
--	-----

Crystal Structure of Domains 3 and 4 of Rat CD4: Relation to the NH ₂ -Terminal Domains R. L. Brady, E. J. Dodson, G. G. Dodson, G. Lange, S. J. Davis, A. F. Williams, A. N. Barclay	979
---	-----

Sequestration from Immune CD4 ⁺ T Cells of Mycobacteria Growing in Human Macrophages P. Pancholi, A. Mirza, N. Bhardwaj, R. M. Steinman	984
---	-----

CD19 of B Cells as a Surrogate Kinase Insert Region to Bind Phosphatidylinositol 3-Kinase D. A. Tuveson, R. H. Carter, S. P. Soltoff, D. T. Fearon	986
---	-----

Localization of a Memory Trace in the Mammalian Brain D. J. Krupa, J. K. Thompson, R. F. Thompson	989
--	-----

Induction of G α_{12} -Specific Antisense RNA in Vivo Inhibits Neonatal Growth C. M. Moxham, Y. Hod, C. C. Malbon	991
---	-----

Cue-Invariant Shape Selectivity of Macaque Inferior Temporal Neurons G. Sáry, R. Vogels, G. A. Orban	995
---	-----

Induction of Olfactory Receptor Sensitivity in Mice H.-W. Wang, C. J. Wysocki, G. H. Gold	998
--	-----

960 Ion channels and leaflet movement



REPORTS

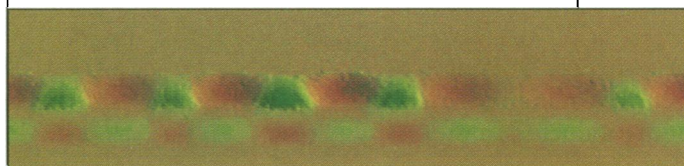
Potassium Channels in <i>Samanea saman</i> Protoplasts Controlled by Phytochrome and the Biological Clock H. Y. Kim, G. G. Coté, R. C. Crain	960
---	-----

A Large Drop in Atmospheric ¹⁴ C/ ¹² C and Reduced Melting in the Younger Dryas, Documented with ²³⁰ Th Ages of Corals R. L. Edwards, J. W. Beck, G. S. Burr, D. J. Donahue, J. M. A. Chappell, A. L. Bloom, E. R. M. Druffel, F. W. Taylor	962
---	-----

Beach Cusps as Self-Organized Patterns B. T. Werner and T. M. Fink	968
---	-----

Geography of End-Cretaceous Marine Bivalve Extinctions D. M. Raup and D. Jablonski	971
---	-----

Interaction of the San Jacinto and San Andreas Fault Zones, Southern California: Triggered Earthquake Migration and Coupled Recurrence Intervals C. O. Sanders	973
---	-----



968 How waves organize beaches

Indicates accompanying feature

■ SCIENCE (ISSN 0036-8075) is published weekly on Friday, except the last week in December, 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 additional mailing offices. Copyright © 1993 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): \$87 (\$47 allocated to subscription). Domestic institutional subscription (51 issues): \$205. Foreign postage extra: Mexico, Caribbean (surface mail) \$50; other countries (air assist delivery) \$95. First class, airmail, student and emeritus rates on request. Canadian rates with GST available upon request, GST #1254 88122. Change of address: allow 6 weeks, giving old and new addresses and 11-digit account number. Postmaster: Send change of address to Science, P.O. Box 2033, Marion, OH 43305-2033. Single copy sales: \$6.00 per issue prepaid includes surface postage; Guide to Biotechnology Products and Instruments, \$20.

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, MA 01970. The identification code for Science is 0036-8075/83 \$1 + .10. 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 objectives 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, to advance education in science, and to increase public understanding and appreciation of the importance and promise of the methods of science in human progress.

Science

260 (5110)

Science **260** (5110), 873-1013.

ARTICLE TOOLS

<http://science.sciencemag.org/content/260/5110>

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.