

171 This Week in *Science*

Editorial

173 Flying into the Future

Letters

175 Population Diversity and the Future of Ecosystems: P. R. EHRlich ■ The Need for Mandatory Retirement for Tenured Faculty: S. MAC LANE; A. REES AND S. P. SMITH; L. GROSS ■ Research on Animals: Unforeseen Benefits: A. R. MORRISON

ScienceScope

183 Priority-setting without data; the Washington shell game in action; etc.

News & Comment

184 Genome Patent Fight Erupts
186 Edelman: Bye Bye, Rockefeller
187 A Window on Life In the Bronze Age
188 JAMA Gets into an Indian Herbal Jam
189 Leroy Hood to Move North
190 Malaria Parasite Gaining Ground Against Science
191 Space Station, NSF Funds Approved
192 *Briefings*: NAS Forms Environment Panel ■ Resurrected Lead ■ Sugar Sours Future for Gum Arabic ■ Pauling Institute Foundering ■ Draper Awards for WWII Foes ■ More Sorry Math News ■ Name Games at DOE ■ Fusion Panel Lowers Its Sights

Research News

194 The SSC: Radical Therapy for Physics
195 CERN's Horserace With the SSC
197 What Makes the San Andreas Tick?
198 Improvements Seen for RU-486 Abortions ■ Feminist Group Dissents on RU-486 Use for Abortion
200 Alcoholism Gene: Coming or Going?
201 Genome Databases

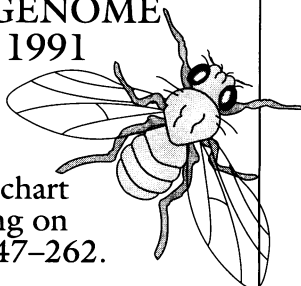
Perspective

214 The Human Genome Initiative—Do Databases Reflect Current Progress?: P. L. PEARSON, B. MAIDAK, M. CHIPPERFIELD, R. ROBBINS

Articles

221 Toward Cloning and Mapping the Genome of *Drosophila*: J. MERRIAM, M. ASHBURNER, D. L. HARTL, F. C. KAFATOS
226 On the Social Science Contribution to Governmental Decision-Making: E. CHELIMSKY
231 Reactivity of Organic Compounds in Hot Water: Geochemical and Technological Implications: M. SISKIN AND A. R. KATRITZKY

THE GENOME MAPS 1991



Pullout chart
appearing on
pages 247–262.

Plus special clip-out guide
to genome data bases
on pages 201–207.

- 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 © 1991 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): \$82 (\$47 allocated to subscription). Domestic institutional subscription (51 issues): \$150. 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 43305-2003. 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, Massachusetts 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.



COVER Model systems are vital for carrying scientists toward their goal of understanding the human genome. This issue presents a wall chart (pages 247 to 262) summarizing progress in mapping the human genome and one of the classic model systems, *Drosophila melanogaster*. In addition, there is a special news feature on genome databases (pages 201 to 207) as well as articles, reports, and a perspective relating to genome analysis. [Cover illustration by R. J. Kaufman, Charlotte, North Carolina]

Research Article

- 238 Role of Nucleosomal Cores and Histone H1 in Regulation of Transcription by RNA Polymerase II: P. J. LAYBOURN AND J. T. KADONAGA

Reports

- 263 A Mantle Plume Initiation Model for the Wrangellia Flood Basalt and Other Oceanic Plateaus: M. A. RICHARDS, D. L. JONES, R. A. DUNCAN, D. J. DEPAOLO
 267 The DNA Binding Arm of λ Repressor: Critical Contacts from a Flexible Region: N. D. CLARKE, L. J. BEAMER, H. R. GOLDBERG, C. BERKOWER, C. O. PABO
 270 Structure and Stability of X-G-C Mismatches in the Third Strand of Intramolecular Triplexes: R. F. MACAYA, D. E. GILBERT, S. MALEK, J. S. SINSHEIMER, J. FEIGON
 274 A Retroviral Oncogene, *akt*, Encoding a Serine-Threonine Kinase Containing an SH2-Like Region: A. BELLACOSA, J. R. TESTA, S. P. STAAL, P. N. TSICHLIS
 277 Defining Protective Responses to Pathogens: Cytokine Profiles in Leprosy Lesions: M. YAMAMURA, K. UYEMURA, R. J. DEANS, K. WEINBERG, T. H. REA, B. R. BLOOM, R. L. MODLIN
 279 Differing Lymphokine Profiles of Functional Subsets of Human CD4 and CD8 T Cell Clones: P. SALGAME, J. S. ABRAMS, C. CLAYBERGER, H. GOLDSTEIN, J. CONVIT, R. L. MODLIN, B. R. BLOOM
 282 Cell Cycle Dependence of Laminar Determination in Developing Neocortex: S. K. MCCONNELL AND C. E. KAZNOWSKI
 285 Long-Term High-Titer Neutralizing Activity Induced by Octameric Synthetic HIV-1 Antigen: C. Y. WANG, D. J. LOONEY, M. L. LI, A. M. WALFIELD, J. YE, B. HOSEIN, J. P. TAM, F. WONG-STAAAL
 288 Modulation of the Time Course of Fast EPSCs and Glutamate Channel Kinetics by Aniracetam: C.-M. TANG, Q.-Y. SHI, A. KATCHMAN, G. LYNCH
 290 Laser Ablation Studies of the Role of the *Drosophila* Oocyte Nucleus in Pattern Formation: D. J. MONTELL, H. KESHISHIAN, A. C. SPRADLING
 293 Suppression of Tumorigenicity in Wilms Tumor by the p15.5-p14 Region of Chromosome 11: S. F. DOWDY, C. L. FASCHING, D. ARAUJO, K.-M. LAI, E. LIVANOS, B. E. WEISSMAN, E. J. STANBRIDGE

Meetings

- 302 Gordon Research Conferences: A. M. CRUICKSHANK ■ Registration Form

Book Reviews

- 311 Exhibiting Cultures, reviewed by B. BENEDICT ■ The Lopsided Ape, L. J. HARRIS ■ Viewing the Earth, K. HUFBAUER ■ Physics and the Rise of Scientific Research in Canada, A. E. MOYER ■ Books Received

Products & Materials

- 318 Monoclonal Antibodies ■ Microbalance ■ Scanning Electron Microscopes ■ DNA Amplification Kit ■ Atmospheric Black Carbon Measurer ■ Scanning Fluorometer ■ Literature

Board of Directors

Donald N. Langenberg
Retiring President,
Chairman

Leon M. Lederman
President

F. Sherwood Rowland
President-elect

Mary Ellen Avery
Francisco J. Ayala
Eugene H. Cota-Robles
Robert A. Frosch
Joseph G. Gavin, Jr.
Florence P. Haseltine
Jeanne M. Shreeve
Warren M. Washington

William T. Golden
Treasurer

Richard S. Nicholson
Executive Officer

Editorial Board

Charles J. Arntzen
Elizabeth E. Bailey
David Baltimore
William F. Brinkman
E. Margaret Burbidge
Pierre-Gilles de Gennes
Joseph L. Goldstein
Mary L. Good
Harry B. Gray
John J. Hopfield
F. Clark Howell
Paul A. Marks
Yasutomi Nishizuka
Helen M. Ranney
Robert M. Solow
Edward C. Stone
James D. Watson

Board of Reviewing Editors

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
Charles R. Cantor
C. Thomas Caskey
Dennis W. Choi
Ralph J. Cicerone
John M. Coffin
Bruce F. Eldridge
Paul T. Englund
Fredric S. Fay

Douglas T. Fearon
Harry A. Fozzard
Victor R. Fuchs
Theodore H. Geballe
Margaret J. Geller
Roger I. M. Glass
Stephen P. Goff
Corey S. Goodman
Stephen J. Gould
Ira Herskowitz
Eric F. Johnson
Stephen M. Kosslyn
Konrad B. Krauskopf
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. Quatrano
Erkki Ruoslahti
Thomas W. Schoener
Ronald H. Schwartz
Terrence J. Sejnowski
Thomas A. Steitz
Robert T. N. Tjian
Emil R. Unanue
Geerat J. Vermeij
Bert Vogelstein
Harold Weintraub
Zena Werb
George M. Whitesides
Owen N. Witte
William B. Wood
Keith Yamamoto

Science

254 (5029)

Science **254** (5029), 171-318.

ARTICLE TOOLS

<http://science.sciencemag.org/content/254/5029>

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.