

879 This Week in *Science*

Editorial

881 Frontiers in Plant Biology

Letters

887 Sexism and Hypocrisy: J. N. SHURKIN; J. MOORE ■ The Future of Universities: S. MAC LANE ■ Transmutation of High-Level Nuclear Waste: M. STEINBERG ■ Proton Microprobe Development: G. LEGGE; Editors' Response ■ Indirect Costs and Merit Review: C. R. SCHEMAN

News & Comment

900 Experts Clash Over Cancer Data
903 Soviet Nuclear Testing: The Republics Say No
904 National Science, Technology Medalists Named
905 Orphan Drug Compromise Bush-Whacked
906 *Briefings*: Playing Chicken with Mount St. Helens ■ Hubble Sees Birth of a Star ■ German Court Rules on Physics Surveys ■ Who Takes Science? ■ New Life for German Egyptology ■ Dreary Days for British Brains ■ Umbilical Blood as Marrow Substitute

Research News

908 Technical Advances Power Neuroscience
910 Nitrogen-Fixing Bacteria Find New Partners ■ The Name of the Rose, or Hunting for Plant Database
912 Venus Is Looking Too Pristine
913 DOE to Map Expressed Genes
A Stirring Tale of Crystal Growth

Articles

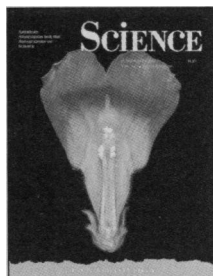
Frontiers in Biology: Plants

923 Phase Change and the Regulation of Shoot Morphogenesis in Plants: R. S. POETHIG
931 Genetic Control of Flower Development by Homeotic Genes in *Antirrhinum majus*: Z. SCHWARZ-SOMMER, P. HUIJSER, W. NACKEN, H. SAEDLER, H. SOMMER
937 Self-Incompatibility: A Self-Recognition System in Plants: V. HARING, J. E. GRAY, B. A. MCCLURE, M. A. ANDERSON, A. E. CLARKE
942 The Texas Cytoplasm of Maize: Cytoplasmic Male Sterility and Disease Susceptibility: C. S. LEVINGS III
948 Developmental Biology of a Plant-Prokaryote Symbiosis: The Legume Root Nodule: J.-P. NAP AND T. BISSELING
954 Molecular Chaperones: The Plant Connection: R. J. ELLIS
959 The Cauliflower Mosaic Virus 35S Promoter: Combinatorial Regulation of Transcription in Plants: P. N. BENFEY AND N.-H. CHUA

Reports

967 Effects of Climatic Warming on Lakes of the Central Boreal Forest: D. W. SCHINDLER, K. G. BEATY, E. J. FEE, D. R. CRUIKSHANK, E. R. DEBRUYN, D. L. FINDLAY, G. A. LINSEY, J. A. SHEARER *et al.*

- 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 © 1990 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): \$80. Domestic institutional subscription (51 issues): \$150. Foreign postage extra: Canada \$46, other (surface mail) \$46, air mail via Amsterdam \$85. First class, airmail, school-year, and student rates on request. **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 1723, Riverton, NJ 08077. **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, \$20 (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. *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 Shown is a wild-type flower of *Antirrhinum majus* (snapdragon), a plant used for genetic and molecular studies of the mechanisms of flower development. Lower parts of the corolla leaves have been removed, revealing reproductive organs (the pistil and four stamens). Z. Schwarz-Sommer *et al.* have studied homeotic genes in *Antirrhinum majus* (page 931). In this issue is a collection of articles that describe progress in understanding molecular aspects of plant biology. See pages 923 to 966. [Photograph by Dietrich Bock]

- 970 Ridge Spreading, Subduction, and Sea Level Fluctuations: M. GURNIS
- 973 Ice Nucleation by Alcohols Arranged in Monolayers at the Surface of Water Drops: M. GAVISH, R. POPOVITZ-BIRO, M. LAHAV, L. LEISEROWITZ
- 975 Chiral Symmetry Breaking in Sodium Chlorate Crystallization: D. K. KONDEPUDI, R. J. KAUFMAN, N. SINGH
- 977 Localized All-or-None Calcium Liberation by Inositol Trisphosphate: I. PARKER AND I. IVORRA
- 979 Binding of SH2 Domains of Phospholipase C₁, GAP, and Src to Activated Growth Factor Receptors: D. ANDERSON, C. A. KOCH, L. GREY, C. ELLIS, M. F. MORAN, T. PAWSON
- 982 A Cytoplasmic Protein Inhibits the GTPase Activity of H-Ras in a Phospholipid-Dependent Manner: M.-H. TSAI, C.-L. YU, D. W. STACEY
- 985 Mesodermal Control of Neural Cell Identity: Floor Plate Induction by the Notochord: M. PLACZEK, M. TESSIER-LAVIGNE, T. YAMADA, T. JESSELL, J. DODD
- 988 Correction of a Defect in Mammalian GPI Anchor Biosynthesis by a Transfected Yeast Gene: R. DEGASPERI, L. J. THOMAS, E. SUGIYAMA, H. M. CHANG, P. J. BECK, P. ORLEAN, C. ALBRIGHT, G. WANECK, J. F. SAMBROOK *et al.*
- 991 Tissue, Developmental, and Tumor-Specific Expression of Divergent Transcripts in Wilms Tumor: A. HUANG, C. E. CAMPBELL, L. BONETTA, M. S. MCANDREWS-HILL, S. CHILTON-MACNEILL, M. J. COPPES *et al.*
- 994 Wilms Tumor Locus on 11p13 Defined by Multiple CpG Island-Associated Transcripts: L. BONETTA, S. E. KUEHN, A. HUANG, D. J. LAW, L. M. KALIKIN, M. KOI, A. E. REEVE, B. H. BROWNSTEIN, H. YEGER *et al.*
- 997 Regulation of Gene Expression with Double-Stranded Phosphorothioate Oligonucleotides: A. BIELINSKA, R. A. SHIVDASANI, L. ZHANG, G. J. NABEL
- 1000 Hyperkalemic Periodic Paralysis and the Adult Muscle Sodium Channel α -Subunit Gene: B. FONTAINE, T. S. KHURANA, E. P. HOFFMAN, G. A. P. BRUNS, J. L. HAINES, J. A. TROFATTER, M. P. HANSON *et al.*
- 1002 Salicylic Acid: A Likely Endogenous Signal in the Resistance Response of Tobacco to Viral Infection: J. MALAMY, J. P. CARR, D. F. KLESSIG, I. RASKIN
- 1004 Increase in Salicylic Acid at the Onset of Systemic Acquired Resistance in Cucumber: J. P. MÉTRAUX, H. SIGNER, J. RYALS, E. WARD, M. WYSS-BENZ, J. GAUDIN, K. RASCHDORF, E. SCHMID, W. BLUM, B. INVERARDI

Book Reviews

- 1020 The Impossible Science, reviewed by: B. M. BERGER ■ Particle Physics and Inflationary Cosmology, D. N. SCHRAMM ■ Packrat Middens, C. WHITLOCK ■ Molecular Systematics, W. S. MOORE ■ Books Received

Products & Materials

- 1029 DNA Purification Kit ■ Custom Peptide Synthesis ■ Software for Factorial Experimental Designs ■ Figure-8 Animal Maze ■ Numerical Analyst Program ■ Agarose for Fine PCR Separation ■ Ion Chromatograph ■ Literature

Board of Directors

Richard C. Atkinson
*Retiring President,
Chairman*

Donald N. Langenberg
President

Leon M. Lederman
President-elect

Mary Ellen Avery
Francisco J. Ayala
Eugene H. Cota-Robles
Robert A. Froesch
Joseph G. Gavin, Jr.
John H. Gibbons
Beatrice A. Hamburg
Florence P. Haseltine
William T. Golden
Treasurer

Richard S. Nicholson
Executive Officer

Editorial Board

Elizabeth E. Bailey
David Baltimore
William F. Brinkman
E. Margaret Burbidge
Pierre-Gilles de Gennes
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
Don L. Anderson
Stephen J. Benkovic
Gunter K-J Blobel
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
Harry A. Fozzard

Theodore H. Geballe
Roger I. M. Glass
Stephen P. Goff
Corey S. Goodman
Stephen J. Gould
Eric F. Johnson
Stephen M. Kosslyn
Konrad B. Krauskopf
Charles S. Levings III
Richard Losick
Joseph B. Martin
John C. McGiff
Anthony R. Means
Mortimer Mishkin
Roger A. Nicoll
William H. Orme-Johnson III
Carl O. Pabo
Yeshayau Pocker

Dennis A. Powers
Erkki Ruoslahti
Thomas W. Schoener
Ronald H. Schwartz
Terrence J. Sejnowski
Robert T. N. Tjian
Virginia Trimble
Emil R. Unanue
Geerat J. Vermeij
Bert Vogelstein
Harold Weintraub
Irving L. Weissman
Zena Werb
George M. Whitesides
Owen N. Witte
William B. Wood
Keith Yamamoto

Science

250 (4983)

Science **250** (4983), 879-1029.

ARTICLE TOOLS

<http://science.sciencemag.org/content/250/4983>

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.