

1487 This Week in *Science*

Editorial

1489 Science Advice to the President

Letters

1493 Factoring and Cryptography: R. L. RIVEST ■ CO₂ Reduction and Reforestation: G. M. WOODWELL; D. H. JANZEN; H. A. WILCOX AND W. J. NORTH; J. SWARTZ; H. HOYER

News & Comment

1497 Conflict of Interest Eyed at Harvard
1499 NIH Panel Finds No Fraud in *Cell* Paper but Cites Errors
"Fifth Force" Update: More Tests Needed
1500 UCSF Wins Round in Fight over Lab
DOE's Guide to Weapons Plant Spills
1501 Furor in Fusion Labs
1502 Gene Transfer Test Back on Track
AIDS Mice Die in NIH Accident
1503 Marine Mammals Join the Navy

Research News

1505 Which Clot-Dissolving Drug Is Best?
1507 Computer Search Solves an Old Math Problem
1508 Extinction Imminent for Native Plants
1509 Sex and Violence in Neuroscience: Sex Hormones Linked to Task Performance ■
More Dimensions for Glutamate Toxicity ■ Cells Commit Suicide Without
Growth Factors
1511 New Active Faults in L.A.

Articles

1513 The Global Impact of the Chernobyl Reactor Accident: L. R. ANSPAUGH,
R. J. CATLIN, M. GOLDMAN
1519 Chemistry of High-Temperature Superconductors: A. W. SLEIGHT

Research Articles

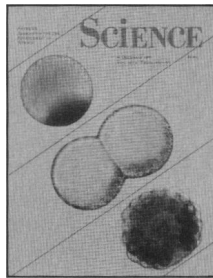
1528 Novel Regulators of Bone Formation: Molecular Clones and Activities:
J. M. WOZNEY, V. ROSEN, A. J. CELESTE, L. M. MITSOCK, M. J. WHITTERS,
R. W. KRIZ, R. M. HEWICK, E. A. WANG

Reports

1535 The Isotopic Composition of Methane in Polar Ice Cores: H. CRAIG,
C. C. CHOU, J. A. WELHAN, C. M. STEVENS, A. ENGELKEMEIR
1539 Dynamics of a Second-Order Phase Transition: $\overline{\text{PI}}$ to $\overline{\text{II}}$ Phase Transition in
Anorthite, CaAl₂Si₂O₈: S. GHOSE, G. VAN TENDELOO, S. AMELINCKX
1541 A Specific, Highly Active Malate Dehydrogenase by Redesign of a Lactate
Dehydrogenase Framework: H. M. WILKS, K. W. HART, R. FEENEY,
C. R. DUNN, H. MUIRHEAD, W. N. CHIA, D. A. BARSTOW *et al.*

■ **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): \$70. Domestic institutional subscription (51 issues): \$110. Foreign postage extra: Canada \$32, other (surface mail) \$32, air-surface via Amsterdam \$85. First class, airmail, school-year, and student rates on request. Single copies \$3.00; back issues \$5.00; 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 Three stages in the embryogenesis of the ascidian *Boltenia villosa*. Upper left: fertilized egg, 30 minutes after sperm penetration. The endogenous orange pigment, which was uniformly distributed in the unfertilized egg, has formed a cap at the vegetal pole. Center: two-cell stage, 120 minutes after fertilization. Lower right: gastrula, 13 hours after fertilization. The pigment has segregated into muscle-lineage cells, which line the posterior rim of the blastopore. See page 1572. [L. Simoncini, M. L. Block, W. J. Moody, Department of Zoology, University of Washington, Seattle, WA 98195]

- 1544 Translation of Unspliced Transcripts After Heat Shock: H. J. YOST AND S. LINDQUIST
- 1548 Accuracy of in Vivo Aminoacylation Requires Proper Balance of tRNA and Aminoacyl-tRNA Synthetase: R. SWANSON, P. HOBEN, M. SUMNER-SMITH, H. UEMURA, L. WATSON, D. SÖLL
- 1551 Competitive Inhibition of *hsp70* Gene Expression Causes Thermosensitivity: R. N. JOHNSTON AND B. L. KUCEY
- 1554 Unexpectedly High Levels of HIV-1 RNA and Protein Synthesis in a Cytocidal Infection: M. SOMASUNDARAN AND H. L. ROBINSON
- 1557 Human T Cell Leukemia Viruses Use a Receptor Determined by Human Chromosome 17: M. A. SOMMERFELT, B. P. WILLIAMS, P. R. CLAPHAM, E. SOLOMON, P. N. GOODFELLOW, R. A. WEISS
- 1559 A DNA Binding Protein Regulated by IL-4 and by Differentiation in B Cells: M. BOOTHBY, E. GRAVALLESE, H.-C. LIOU, L. H. GLIMCHER
- 1563 Suppression of the Neoplastic Phenotype by Replacement of the RB Gene in Human Cancer Cells: H.-J. S. HUANG, J.-K. YEE, J.-Y. SHEW, P.-L. CHEN, R. BOOKSTEIN, T. FRIEDMANN, E. Y.-H. P. LEE, W.-H. LEE
- 1566 Distinct Regions of Sp1 Modulate DNA Binding and Transcriptional Activation: J. T. KADONAGA, A. J. COUREY, J. LADIKA, R. TJIAN
- 1570 The *elav* Gene Product of *Drosophila*, Required in Neurons, Has Three RNP Consensus Motifs: S. ROBINOW, A. R. CAMPOS, K.-M. YAO, K. WHITE
- 1572 Lineage-Specific Development of Calcium Currents During Embryogenesis: L. SIMONCINI, M. L. BLOCK, W. J. MOODY
- 1575 Grafting Genetically Modified Cells to the Damaged Brain: Restorative Effects of NGF Expression: M. B. ROSENBERG, T. FRIEDMANN, R. C. ROBERTSON, M. TUSZYNSKI, J. A. WOLFF, X. O. BREAKEFIELD, F. H. GAGE
- 1578 Evidence That the M2 Membrane-Spanning Region Lines the Ion Channel Pore of the Nicotinic Receptor: R. J. LEONARD, C. G. LABARCA, P. CHARNET, N. DAVIDSON, H. A. LESTER

Book Reviews

- 1583 Sexual Selection, reviewed by R. GIBSON ■ The Cold Light of Dawn, D. E. OSTERBROCK ■ Superstrings, B. OVRUT ■ Some Other Books of Interest ■ Books Received

Products & Materials

- 1588 Imaging Workstation ■ Electrophoretic Power Supplies ■ Immobilized Recombinant Protein G ■ Plotting Software ■ Nucleic Acid Photodocumentation System ■ Amino Acid Analyzer ■ Cytometer ■ Literature

Board of Directors

Sheila E. Widnall
Retiring President, Chairman

Walter E. Massey
President

Richard C. Atkinson
President-elect

Floyd E. Bloom
Mary E. Clutter
Eugene H. Cota-Robles
Mildred S. Dresselhaus
Joseph G. Gavin, Jr.
John H. Gibbons
Beatrice A. Hamburg
Donald N. Langenberg
William T. Golden
Treasurer
Alvin W. Trivelpiece
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
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
Charles R. Cantor
Ralph J. Cicerone
John M. Coffin
Robert Dorfman
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
Charles S. Levings III
Richard Losick
Karl L. Magleby
Philippa Marrack
Joseph B. Martin
John C. McGiff
Mortimer Mishkin
Jiri Novotny
Gordon H. Orians
Carl O. Pabo

Yeshayau Pocker
Michael I. Posner
Dennis A. Powers
Jean Paul Revel
Russell Ross
James E. Rothman
Daniel V. Santi
Ronald H. Schwartz
Vernon L. Smith
Otto T. Solbrig
Robert T. N. Tjian
Virginia Trimble
Geerat J. Vermeij
Bert Vogelstein
Harold Weintraub
Irving L. Weissman
George M. Whitesides
Owen N. Witte
William B. Wood

Science

242 (4885)

Science **242** (4885), 1487-1588.

ARTICLE TOOLS

<http://science.sciencemag.org/content/242/4885>

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.