

627 This Week in *Science*

Editorial

629 Oil Spills

Letters

631 Budget Cuts at NIH: M. J. PEAK ■ Climate and Forests: R. A. SEDJO ■ Retraction: K. M. MILAM, S. HORN, P. J. TOFILON, D. F. DEEN, L. J. MARTON ■ Educational Reform: D. ELKIND ■ Yanomami Indians and Anthropological Ethics: B. ALBERT AND A. R. RAMOS ■ Notification to Readers: J. F. FERRER AND P. GUPTA

News & Comment

643 The Dingell Probe Finally Goes Public ■ Credit for Whistle-Blower Vanishes ■ Secret Service Probes Lab Notebooks ■ "I Am Not a Neat Person" ■ A Question of Intent ■ NIH to Use Forensics
647 Electrochemists Fail to Heat Up Cold Fusion
648 Germany Sets Up New Space Agency
Researchers Irked by Changes to Testimony
649 Frazier Honored by Psychiatrists
Koop Resigns in a Huff
Science Artifacts on the Block
650 Skeleton Alleged in the Stealth Bomber's Closet

Research News

652 Two Cultures Find Common Ground
654 Gene Signals Relapse of Breast, Ovarian Cancers
655 New Chip May Speed Genome Analysis

Articles

659 The Economic Status of the Elderly: M. D. HURD
664 Observations in Particle Physics from Two Neutrinos to the Standard Model: L. M. LEDERMAN
673 How Old Is the Genetic Code? Statistical Geometry of tRNA Provides an Answer: M. EIGEN, B. F. LINDEMANN, M. TIETZE, R. WINKLER-OSWATITSCH, A. DRESS, A. VON HAESLER

Research Articles

679 Stereochemistry of RNA Cleavage by the *Tetrahymena* Ribozyme and Evidence That the Chemical Step Is Not Rate-Limiting: J. A. MCSWIGGEN AND T. R. CECH

Reports

684 Model Simulation of the Cretaceous Ocean Circulation: E. J. BARRON AND W. H. PETERSON

- **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 © 1989 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): \$75. Domestic institutional subscription (51 issues): \$120. Foreign postage extra: Canada \$46, other (surface mail) \$46, air mail via Amsterdam \$85. First class, airmail, school-year, and student rates on request. **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, \$18 (for postage and handling add per copy \$1.00 U.S., \$1.50 Canada, \$2.00 other foreign). Bulk rates on request. **Change of address:** allow 6 weeks, giving old and new addresses and 11-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*, P.O. Box 1722, Riverton, NJ 08077. *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 Color-enhanced tissue section from a human ovarian epithelial carcinoma. The tumor cells contain >fivefold amplification of the HER-2/*neu* proto-oncogene. The section is immunostained with antibody to the HER-2/*neu* protein. The typical cystic nature of the tumor can be seen, and there is intense membrane staining (brown color) of the tumor cells lining the cystic structures. Stromal cells and nonmalignant elements are unstained, indicating the absence of the protein ($\times 100$). See page 707. [Photograph by D. J. Slamon, Department of Medicine, UCLA School of Medicine, Los Angeles, CA 90024, and M. F. Press, Department of Pathology, University of Southern California School of Medicine, Los Angeles, CA 90033]

- 686 Hearing in Honey Bees: Detection of Air-Particle Oscillations: W. F. TOWNE AND W. H. KIRCHNER
- 688 Fibroblast Growth Factor in the Extracellular Matrix of Dystrophic (mdx) Mouse Muscle: J. DiMARIO, N. BUFFINGER, S. YAMADA, R. C. STROHMAN
- 690 Corn and Culture in Central Andean Prehistory: S. JOHANNESSEN AND C. A. HASTORF
- 692 Stereochemical Course of Catalysis by the *Tetrahymena* Ribozyme: J. RAJAGOPAL, J. A. DOUDNA, J. W. SZOSTAK
- 694 Identification of the Fusion Peptide of Primate Immunodeficiency Viruses: M. L. BOSCH, P. L. EARL, K. FARGNOLI, S. PICCIAFUOCO, F. GIOMBINI, F. WONG-STAAAL, G. FRANCHINI
- 697 Calicheamicin γ_1^1 and DNA: Molecular Recognition Process Responsible for Site-Specificity: N. ZEIN, M. PONCIN, R. NILAKANTAN, G. A. ELLESTAD
- 700 Complementary DNA Coding Click Beetle Luciferases Can Elicit Bioluminescence of Different Colors: K. V. WOOD, Y. A. LAM, H. H. SELIGER, W. D. McELROY
- 702 Reexamination of the Three-Dimensional Structure of the Small Subunit of RuBisCo from Higher Plants: S. KNIGHT, I. ANDERSSON, C.-I. BRÄNDÉN
- 705 Receptor-Mediated Drug Delivery to Macrophages in Chemotherapy of Leishmaniasis: A. MUKHOPADHYAY, G. CHAUDHURI, S. K. ARORA, S. SEHGAL, S. K. BASU
- 707 Studies of the HER-2/*neu* Proto-oncogene in Human Breast and Ovarian Cancer: D. J. SLAMON, W. GODOLPHIN, L. A. JONES, J. A. HOLT, S. G. WONG, D. E. KEITH, W. J. LEVIN, S. G. STUART, J. UDOVE, A. ULLRICH, M. F. PRESS
- 713 Activation of $\gamma\delta$ T Cells in the Primary Immune Response to *Mycobacterium tuberculosis*: E. M. JANIS, S. H. E. KAUFMANN, R. H. SCHWARTZ, D. M. PARDOLL
- 716 Neural Integration of Information Specifying Structure from Stereopsis and Motion: M. NAWROT AND R. BLAKE

Book Reviews

- 719 Otto Folin, reviewed by J. T. EDSALL ■ Nuts and Bolts of the Past, C. PURSELL ■ Evaporite Sedimentology and Evaporites and Hydrocarbons, P. SONNENFELD ■ Continental Flood Basalts, S. A. MORSE ■ Books Received

Products & Materials

- 724 Magnetic Cell Sorter ■ Statistical Experimental Design Software ■ In Vivo Electrochemistry System ■ Cell and Tissue Adhesive ■ Population Dynamics Software ■ Multivariate Data Analysis Software ■ Literature

Board of Directors

Walter E. Massey
*Retiring President,
Chairman*

Richard C. Atkinson
President

Donald N. Langenberg
President-elect

Mary Ellen Avery
Francisco J. Ayala
Floyd E. Bloom
Mary E. Clutter
Eugene H. Cota-Robles
Joseph G. Gavin, Jr.
John H. Gibbons
Beatrix A. Hamburg
William T. Golden
Treasurer
Richard S. Nicholson
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
Kathryn Calame
Charles R. Cantor
Ralph J. Cicerone
John M. Coffin
Robert Dorfman
Bruce F. Eldridge
Paul T. Englund
Fredric S. Fay
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
Carl O. Pabo

Yeshayau Pocker
Michael I. Posner
Dennis A. Powers
Russell Ross
James E. Rothman
Erkki Ruoslahti
Ronald H. Schwartz
Vernon L. Smith
Robert T. N. Tjian
Virginia Trimble
Emil R. Unanue
Geerat J. Vermeij
Bert Vogelstein
Harold Weintraub
Irving L. Weissman
George M. Whitesides
Owen N. Witte
William B. Wood

Science

244 (4905)

Science **244** (4905), 627-724.

ARTICLE TOOLS

<http://science.sciencemag.org/content/244/4905>

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.