# This Week in Science

## Editorial
953 Materials Science: J. I. BRAUMAN

## Letters
955 Textbook Controversy: P. C. VITZ; S. SANDERSON Homelessness: D. MECHANIC; P. B. FIELD; R. J. WYATT and E. DE RENZO

## Perspective
959 Structure, Function, and Assembly of Membrane Proteins: E. RACKER

## News & Comment
962 The Dark Side of SDI AAAS Briefing: Expanding Deserts, Shrinking Resources Nuclear Tests Defended AIDS Stresses Health Care in San Francisco We're Killing Our World
965 Space Station Cost Estimates Double
966 Pilot Program Cuts Red Tape for Federal Grants Briefing: Broader Public Role Sought in Biotechnology
967 Competitiveness Bill Goes to Congress NSF to Formulate 5-Year Plan, Budget
968 Release of Soviet Dissidents Continues Academy to Drop Issues Quarterly DOD to Reassess Bioweapons' Risks

## Research News
969 Four Legs Bad, Two Legs Good Freed Hands or Enslaved Feet?
971 Glimpses of Solar Systems in the Making
973 Milankovitch Climate Cycles Through the Ages
974 Polyphosphoinositide Research Updated

## Articles
1003 Optical Materials: A. M. GLASS
1010 The Art and Science of Microstructural Control: F. SPAEPEN
1015 Hierarchical Structure in Polymeric Materials: E. BAER, A. HILTNER, H. D. KEITH
1023 Artificially Structured Thin-Film Materials and Interfaces: V. NARAYANAMURTI
1029 Electronic Theory for Materials Science: H. EHRENREICH

## Reports
1036 Functional Box-Counting and Multiple Elliptical Dimensions in Rain: S. LOVEJOY, D. SCHERTZER, A. A. TSONIS
1038 Foam Structures with a Negative Poisson’s Ratio: R. LAKES
1043 Bilirubin Is an Antioxidant of Possible Physiological Importance: R. STOCKER, Y. YAMAMOTO, A. F. MC DONAGH, A. N. GLAZER, B. N. AMES

---

**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 © 1987 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): $65. Domestic institutional subscription (51 issues): $96. Foreign postage extra: Canada $32, other (surface mail) $27, airmail via Amsterdam $95. First class, airmail, school-year, and student rates on request. Single copies $2.50 ($3 by mail); back issues $4 ($4.50 by mail); 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 others 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 0036-8075/87 $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.
The page contains various articles and reviews. Here are some highlights:


1053 Isolation of an Olfactory cDNA: Similarity to Retinol-Binding Protein Suggests a Role in Olfaction: K.-H. Lee, R. G. Wells, R. R. Reed


1062 Apogeotropic Roots in an Amazon Rain Forest: R. L. Sanford, Jr.

1064 Relationship Between the c-myb Locus and the 6q− Chromosomal Aberration in Leukemias and Lymphomas: C. Barletta, F.-G. Pelicci, L. C. Kenyon, S. D. Smith, R. Dalla-Favera

1068 Absence of Significant Cellular Dilution During ADH-Stimulated Water Reabsorption: K. Strange and K. R. Spring

1070 Arginine Vasopressin as a Thyrotropin-Releasing Hormone: M. D. Lumpkin, W. K. Samson, S. M. McCann

Technical Comments


AAAS Meetings

1088 RD Policies, Budgets, and Economic Competitiveness: Advance Registration Form; Hotel Reservation Form

Book Reviews

1090 Arms Control Verification, Verification, and The Verification Challenge, reviewed by B. E. Frieling ■ Ring Complex Granites and Anorogenic Magmatism, J. Gittins ■ Introduction to Experimental Particle Physics, C. Blocker ■ Hypatia's Heritage, A. H. Kohlitz ■ Books Received

Software Reviews

1093 Personal Bibliographic Databases: R. E. Wachtel

Products & Materials

1097 Flow Chart Software ■ Visual Stimulus System ■ Cell Culture System ■ Laboratory Freezer ■ Automatic Liquid Scintillation Counter ■ Nucleic Acid Purification Columns ■ HPLC Curve Resolution ■ 2-D Electrophoresis ■ Literature

27 FEBRUARY 1987