

1355 This Week in *Science*

Editorial

1357 Isotopes in Earth Science

Letters

1361 Journal Cancellations: D. H. JONES AND V. M. BOWDEN ■ Cat Research at Cornell: F. H. T. RHODES

News & Comment

- 1368 Research and the "Flexible Freeze"
1370 NSF Names First 11 Science Centers
1371 A Tiff Over Titles at Stanford
1372 Stealth Bomber: Evading Flak Over Cost, Mission
1374 Patent Backlog: Solution Pending
1375 Europeans Decide on a Trip to Saturn
1376 Galeev to Head Space Research Institute
Superconductor Rumor
Germany Drafting Biotechnology Law
Jim Watson on the Budget

Research News

- 1377 *jun* Is Bustin' Out All Over
1379 Caution Continues Over Transplants
MIT to Get Superconductor Patent
1380 Snowbird II: Clues to Earth's Impact History: The First Killer Crater Looks Like a Wimp ■ The Killer Impact Is Getting Tamed ■ If There Was One Killer Impact, Were There More? ■ How Catastrophic Were the K-T Extinctions?
1382 AMPTE Outfoxed by Magnetosphere
1383 *Random Samples*: Panning Pork ■ A Surprise for Sakharov ■ From Metrecal to Methadone

Articles

- 1385 The Further Evolution of Cooperation: R. AXELROD AND D. DION
1390 Experimental Constraints on Theories of High-Transition Temperature Superconductors: W. A. LITTLE
1396 Living with Clathrin: Its Role in Intracellular Membrane Traffic: F. M. BRODSKY

Reports

- 1403 Evidence for Low Temperatures and Biologic Diversity in Cretaceous High Latitudes of Australia: P. V. RICH, T. H. RICH, B. E. WAGSTAFF, J. MCEWEN MASON, C. B. DOUTHITT, R. T. GREGORY, E. A. FELTON
1406 X-ray Scattering Studies of Aligned, Stacked Surfactant Membranes: E. B. SIROTA, G. S. SMITH, C. R. SAFINYA, R. J. PLANO, N. A. CLARK

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COVER Photomicrograph of *Anabaena* species strain DW12-2.2 filaments containing a mutant *xisA* gene that was inactivated by site-directed insertion of an antibiotic gene cassette. The mutant strain forms heterocysts when transferred to a medium lacking a source of combined nitrogen, but the heterocysts are unable to excise an 11-kilobase DNA element from the chromosome and do not fix nitrogen. See page 1421. [James W. Golden, Texas A&M University, College Station, TX 77843]

- 1409 Neonatal Hepatitis Induced by α_1 -Antitrypsin: A Transgenic Mouse Model: M. J. DYCAICO, S. G. N. GRANT, K. FELTS, W. S. NICHOLS, S. A. GELLER, J. H. HAGER, A. J. POLLARD, S. W. KOHLER, H. P. SHORT *et al.*
- 1412 Regulation of the Erythropoietin Gene: Evidence That the Oxygen Sensor Is a Heme Protein: M. A. GOLDBERG, S. P. DUNNING, H. F. BUNN
- 1415 Human Insulin-Degrading Enzyme Shares Structural and Functional Homologies with *E. coli* Protease III: J. A. AFFHOLTER, V. A. FRIED, R. A. ROTH
- 1418 Many Transcription Factors Interact Synergistically with Steroid Receptors: R. SCHÜLE, M. MULLER, C. KALTSCHMIDT, R. RENKAWITZ
- 1421 Genome Rearrangement and Nitrogen Fixation in *Anabaena* Blocked by Inactivation of *xisA* Gene: J. W. GOLDEN AND D. R. WIEST
- 1424 Growth Factors Regulate Transin Gene Expression by *c-fos*-Dependent and *c-fos*-Independent Pathways: L. D. KERR, J. T. HOLT, L. M. MATRISIAN
- 1427 Mitochondrial DNA Mutation Associated with Leber's Hereditary Optic Neuropathy: D. C. WALLACE, G. SINGH, M. T. LOTT, J. A. HODGE, T. G. SCHURR, A. M. S. LEZZA, L. J. ELSAS II, E. K. NIKOSKELAINEN
- 1430 Cyclic AMP-Responsive DNA-Binding Protein: Structure Based on a Cloned Placental cDNA: J. P. HOEFFLER, T. E. MEYER, Y. YUN, J. L. JAMESON, J. F. HABENER
- 1433 Newly Identified Brain Potassium Channels Gated by the Guanine Nucleotide Binding Protein G_o : A. M. J. VANDONGEN, J. CODINA, J. OLATE, R. MATTERA, R. JOHO, L. BIRNBAUMER, A. M. BROWN
- 1437 Experimentally Induced Visual Projections into Auditory Thalamus and Cortex: M. SUR, P. E. GARRAGHTY, A. W. ROE
- 1441 Reconstitution and Phosphorylation of Chloride Channels from Airway Epithelium Membranes: H. H. VALDIVIA, W. P. DUBINSKY, R. CORONADO
- 1444 Astrocytes Synthesize Angiotensinogen in Brain: R. L. STORNETTA, C. L. HAWELU-JOHNSON, P. G. GUYENET, K. R. LYNCH
- 1446 Metabolic Correction of Defects in the Lipid Anchoring of Thy-1 in Lymphoma Mutants: D. GUPTA, A. TARTAKOFF, E. TISDALE

Book Reviews

- 1449 Proceedings of the Second International Conference on Quantitative Genetics, reviewed by J. F. CROW ■ Complex Interactions in Lake Communities, S. S. KILHAM ■ High Speed Astronomical Photometry, P. SZKODY ■ The Behavior of the Earth, P. J. WYLLIE ■ Books Received

Products & Materials

- 1456 Graphics Workstations for Visual Computing ■ Liquid Chromatograph ■ Gradient Formers ■ Premixed Sequencing Gel Solution ■ MSDSs on CD-ROM ■ Ray-Tracing Software ■ Cell Transfer System ■ Literature

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