COVER
Heavy pollution blankets Tiananmen Square, Beijing, on 27 December 2007. Chinese authorities are taking drastic measures to improve the city's air quality for the Olympics. Bad air is just one of many environmental challenges China is facing. See the special News Focus section beginning on page 628.
Image: Feng Li/Getty Images

NEWS OF THE WEEK
New Catalyst Marks Major Step in the March Toward Hydrogen Fuel
>> Science Express Report by M. W. Kanan et al.; Reports pp. 671 & 676
Regulators Seek to Redefine ‘Working Life’
New Minister Raises Expectations for Science in Argentina
Is Dinosaur ‘Soft Tissue’ Really Slime?
SCIENCESCOPE
Science at the Olympics
Will Beijing’s Dirty Air Hurt Performance?
Can Ice Vests Provide a Competitive Chill?
Do New Materials Make the Athlete?
Can Neuroscience Provide a Mental Edge?
Does Doping Work?
>> Science Careers article by E. Pain p. 607

NEWS FOCUS
China’s Environmental Challenges
Three Gorges Dam: Into the Unknown
Fears Over Western Water Crisis
A Green Fervor Sweeps the Qinghai-Tibetan Plateau
Beijing’s Marathon Run to Clean Foul Air Nears Finish Line
>> Editorial p. 611; Science Podcast

LETTERS
The Cost Benefits of Early Detection W. G. Guntheroth
Policy Forum Offered New Ideas J. Liu and J. Diamond
Survey Says: Name a Role Model M. R. Webb

BOOKS ET AL.
The Dragon and the Elephant Agricultural and Rural Reforms in China and India A. Gulati and S. Fan, Eds., reviewed by C. P. Timmer
Science Festivals: Celebrating Science as Culture L. M. Krauss

POLICY FORUM
Structural Disequilibria in Biomedical Research M. S. Teitelbaum

PERSPECTIVES
A Splicing Switch for T Cells N. Holmes
>> Report p. 686
The Cosmic Rosetta Stone V. Bromm
>> Report p. 669
"Make and Bake" in Signaling A. G. Eliopoulos
>> Research Article p. 663
Did You Say "Fast"? J. Flückiger
>> Report p. 680
Electrochemical Capacitors for Energy Management J. R. Miller and P. Simon
Ecosystem Disturbance, Carbon, and Climate S. W. Running
DEVELOPMENTAL BIOLOGY

Induced Pluripotent Stem Cells Generated from Patients with ALS Can Be Differentiated into Motor Neurons
J. T. Dimos et al.

Skin cells from elderly individuals with a mutation that causes amyotrophic lateral sclerosis (ALS) were used to derive stem cells that could then be differentiated.

10.1126/science.1158799

PALEOCLIMATE

Regional Synthesis of Mediterranean Atmospheric Circulation During the Last Glacial Maximum
J. Kuhlemann et al.

A three-dimensional reconstruction of atmospheric temperatures in the Mediterranean during glacial times is analogous to one of winter during the Little Ice Age.

10.1126/science.1157638

TECHNICAL COMMENT ABSTRACTS

NEUROSCIENCE

Comment on “Magnetic Resonance Spectroscopy Identifies Neural Progenitor Cells in the Live Human Brain”
J. C. Hoch, M. W. Maciejewski, M. R. Gryk
full text at www.sciencemag.org/cgi/content/full/321/5889/640b

Comment on “Magnetic Resonance Spectroscopy Identifies Neural Progenitor Cells in the Live Human Brain”
S. D. Friedman
full text at www.sciencemag.org/cgi/content/full/321/5889/640c

Comment on “Magnetic Resonance Spectroscopy Identifies Neural Progenitor Cells in the Live Human Brain”
J. F. A. Jansen, J. D. Gearhart, J. W. M. Bulte
full text at www.sciencemag.org/cgi/content/full/321/5889/640d

Response to Comments on “Magnetic Resonance Spectroscopy Identifies Neural Progenitor Cells in the Live Human Brain”
P. M. Djurić et al.
full text at www.sciencemag.org/cgi/content/full/321/5889/640e

REVIEW

PALEONTOLOGY

Hopping Hotspots: Global Shifts in Marine Biodiversity
W. Renema et al.

647 & 669

BREVIA

BIOCHEMISTRY

Evidence of Global Chlorophyll d
Y. Kashiyama et al.

A survey of chlorophyll d, used by a cyanobacterium for harvesting infrared light, implies that this microbe inhabits a much wider range than previously thought.

658

RESEARCH ARTICLES

BIOCHEMISTRY

Crystal Structure of the Termination Module of a Nonribosomal Peptide Synthetase
A. Tanovic, S. A. Samel, L.-O. Essen, M. A. Marahiel

A large enzyme complex assembles peptide natural products without ribosomal participation by successive catalytic steps at the end of a flexible, substrate-loaded arm.

659

CELL BIOLOGY

Essential Cytoplasmic Translocation of a Cytokine Receptor–Assembled Signaling Complex
A. Matsuzawa et al.

Degradation of one member of a protein complex that forms when a cytokine receptor is activated causes the complex to move to the cytoplasm, triggering the downstream pathway.

663

ASTRONOMY

Protostar Formation in the Early Universe
N. Yoshida, K. Omukai, L. Hernquist

A model traces the coalescence of small variations in gas density after the Big Bang into protostars, showing that the first stars would be large enough to make heavy elements.

669

REPORTS

647 & 669
IMMUNOLOGY

Pyogenic Bacterial Infections in Humans with MyD88 Deficiency

H. von Bernuth et al.

Although a key immune gene is necessary for mice to fight off a broad range of pathogens, in humans it is only required to protect against a few specialized bacteria.

IMMUNOLOGY

Censoring of Autoreactive B Cell Development by the Pre-B Cell Receptor

R. A. Keenan et al.

A protein that helps newly rearranged antibody chains arrive at the cell surface of immature immune cells is found to help delete cells with potential autoreactivity.

DEVELOPMENTAL BIOLOGY

Generation of Pluripotent Stem Cells from Adult Mouse Liver and Stomach Cells

T. Aoi et al.

Induced pluripotent stem cells are generated by direct reprogramming of adult liver and stomach cells.

NEUROSCIENCE

The Cell and Molecular Basis of Mechanical, Cold, and Inflammatory Pain

B. Abrahamsen et al.

Pain neurons containing a particular sodium channel respond only to cold, mechanical, and inflammatory pain, not to all painful stimuli as previously assumed. >> Science Podcast
Some anesthetics activate TRPA1 channels to trigger pain and nerve-mediated inflammation.

PRESENTATION: A Static Network Analysis Tool for Pharmacological Analysis of Signal Transduction Pathways
B. B. Samal and L. E. Eiden
Simulate knocking out one or more components from a pathway to find alternate connections between a stimulus and a target response.