Cover
A montage showing three views of a 5-millimeter-long juvenile medaka, with the nervous system imaged with a digital scanned laser light sheet fluorescence microscope. This technique has been used to reconstruct embryogenesis in zebrafish. See page 1065.
*Image: Philipp Keller, Lazaro Centanin, Annette Schmidt/EMBL*

Editorial
A Call to Serve
by William A. Wulf and Anita K. Jones

News of the Week
Obama Victory Raises Hopes for New Policies, Bigger Budgets
New Congress Looks Familiar
European Union Floats Tighter Animal-Research Rules

Sciencescope
Vatican Science Conference Offers an Ambiguous Message
Statin Therapy Reduces Disease in Healthy Volunteers—but How, Exactly?

News Focus
The Birth of Childhood
>> Report p. 1089; Science Podcast
Minnesota Ecologist Pushes Prairie Biofuels
A Bunch of Trouble

Letters
European Union and NIH Collaborate
E. A. Zerhouni and J. Potočnik
Skeptical of Assisted Colonization
I. Davidson and C. Simkanin
Assisted Colonization Won’t Help Rare Species
D. Huang
Where Species Go, Legal Protections Must Follow
G. Chapron and G. Samelius
Response: O. Hoegh-Guldberg et al.

Corrections and Clarifications

Books, et al.
Trace Fossil Analysis
A. Seilacher, reviewed by S. Jensen
In Sputnik’s Shadow: The President’s Science Advisory Committee and Cold War America
Z. Wang, reviewed by G. A. Good
Sant Ocean Hall reviewed by L. D. Jenkins

Policy Forum
Certificates of Confidentiality and Compelled Disclosure of Data
L. M. Beskow, L. Dame, E. J. Costello

Perspectives
A Sideways Glance at Chemical Reactivity
D. A. Blank >> Report p. 1073
A Biolinguistic Agenda
M. D. Hauser and T. Bever
RT Slides Home…
S. G. Sarafianos and E. Arnold >> Report p. 1092
Understanding Glacier Flow in Changing Times
R. B. Alley, M. Fahnestock, I. Joughin
A Protein Pupylation Paradigm
S. Mukherjee and K. Orth >> Report p. 1104
SCIENCE EXPRESS
www.sciencexpress.org

ASTRONOMY
Optical Images of an Exosolar Planet 25 Light-Years from Earth
P. Kalas et al.
Images from the Hubble Space Telescope reveal a Jupiter-sized planet, perhaps with a surrounding dust disk, orbiting about 115 astronomical units from a nearby main sequence star.
10.1126/science.1166609

ASTRONOMY
Direct Imaging of Multiple Planets Orbiting the Star HR 8799
C. Marois et al.
Infrared images from the Keck and Gemini telescopes reveal three giant planets orbiting counterclockwise around a young star, in a scaled-up version of our solar system.
10.1126/science.1166585

PERSPECTIVE: Exoplanets—Seeing Is Believing
M. S. Marley
10.1126/science.1167569

MEDICINE
Genomic Loss of microRNA-101 Leads to Overexpression of Histone Methyltransferase EZH2 in Cancer
S. Varambally et al.
In some human prostate cancers, a genomic deletion eliminates a key regulatory microRNA, which results in disruption of gene silencing mechanisms.
10.1126/science.1165395

CELL BIOLOGY
A Role for the ESCRT System in Cell Division in Archaea
R. Y. Samson, T. Obita, S. M. Freund, R. L. Williams, S. D. Bell
A class of proteins required for membrane trafficking and cytokinesis in eukaryotes is also unexpectedly required in some Archaea for cell division.
10.1126/science.1165322

TECHNICAL COMMENT ABSTRACTS

PLANETARY SCIENCE
Comment on “Ancient Asteroids Enriched in Refractory Inclusions”
D. C. Hezel and S. S. Russell
full text at www.sciencemag.org/cgi/content/full/322/5904/1050a
Response to Comment on “Ancient Asteroids Enriched in Refractory Inclusions”
J. M. Sunshine et al.
full text at www.sciencemag.org/cgi/content/full/322/5904/1050b

BREVIA

ECOLOGY
Physiographic Control on the Development of Spartina Marshes
G. Fragoso and T. Spencer
Erosion of sediment is harmful to the growth of marsh grass, possibly explaining salt marsh die-back, a phenomenon thought to be a result of sea-level changes.
10.1126/science.1166804

RESEARCH ARTICLE

DEVELOPMENTAL BIOLOGY
Reconstruction of Zebrafish Early Embryonic Development by Scanned Light Sheet Microscopy
P. J. Keller, A. D. Schmidt, J. Wittbrodt, E. H. K. Stelzer
Digitized tracking of each cell during the first 24 hours of zebrafish development reveals how the body axis and germ layer are formed and provides a community resource.
10.1126/science.1166586

MATERIALS SCIENCE
Kinetics of Individual Nucleation Events Observed in Nanoscale Vapor-Liquid-Solid Growth
B. J. Kim et al.
Transmission electron microscopy reveals the kinetics of nucleation and growth of silicon particles from liquid gold-silicon droplets, the first step in growing nanowires.
10.1126/science.1166603

CHEMISTRY
Spectroscopic Tracking of Structural Evolution in Ultrafast Stilbene Photoisomerization
S. Takeuchi et al.
Raman spectroscopy offers a global view of how all the atoms move during the photoinduced picosecond isomerization of stilbene.
10.1126/science.1166606

CHEMISTRY
Random Tiling and Topological Defects in a Two-Dimensional Molecular Network
M. O. Blunt et al.
An organic molecule absorbed on graphite forms networks that represent an intermediate state between crystalline ordering and amorphous packing.
10.1126/science.1166607
Deficiency Reveals a Critical Role for CD8 
Podcast
Dissociation
Fixation
VOL 322 14 NOVEMBER 2008
Pelvis from Gona, Ethiopia 
reveals
Allow 4 weeks, giving old and new addresses and 8-digit account number.
provided that $20.00 per article is paid directly to CCC, 222 Rosewood Drive, Danvers, MA 01923.
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,
degradation, is linked to lysines in prokaryotic proteins destined
M. J. Pearce
Pathway of 
Ubiquitin-Like Protein Involved in the Proteasome
IMMUNOLOGY
Recruitment of immune cells to sites of inflammation.
An endogenous inhibitor of immune cell adhesion dampens
E. Y. Choi
Inhibitor, Limits Inflammatory Cell Recruitment
Del-1, an Endogenous Leukocyte-Endothelial Adhesion
Inhibitor, Limits Inflammatory Cell Recruitment
K. Hildner et al.
In mice, an identifiable subset of antigen-presenting cells is necessary
for a normal immune cell response to viral infection and for efficient
rejection of tumor cells.
IMMUNOLOGY
Del-1, an Endogenous Leukocyte-Endothelial Adhesion
Inhibitor, Limits Inflammatory Cell Recruitment
E. Y. Choi et al.
An endogenous inhibitor of immune cell adhesion dampens
recruitment of immune cells to sites of inflammation.
CELL BIOLOGY
Ubiquitin-Like Protein Involved in the Proteasome
Pathway of Mycobacterium tuberculosis
M. J. Pearce et al.
A prokaryotic version of ubiquitin, a eukaryotic tag for protein
degradation, is linked to lysines in prokaryotic proteins destined
for destruction, a process called pufylation.
>> Perspective p. 1062
MICROBIOLOGY
Genome of an Endosymbiotic Coupling N\(_2\) Fixation to Cellulolysis Within Protoplast Cells in Termite Gut
Y. Hongoh et al.
In the termite gut, an endosymbiotic bacterium fixes atmospheric
nitrogen within the cells of its cellulose-digesting host protist,
allowing the insect to thrive on wood.
MICROBIOLOGY
Globally Distributed Uncultivated Oceanic N\(_2\)-Fixing Cyanobacteria Lack Oxygenic Photosystem II
J. P. Zehr et al.
An abundant marine cyanobacteria group fixes nitrogen but lacks
the genes for carbon fixation and oxygen production, forcing a
reevaluation of nitrogen and carbon cycling.
>> Science Podcast
PLANT SCIENCE
Arabidopsis Stomatal Initiation Is Controlled by MAPK-Mediated Regulation of the bHLH SPEECHLESS
G. R. Lampard, C. A. MacAlister, D. C. Bergmann
Positive and negative developmental signals that determine the
locations of gas-exchanging leaf pores converge on a specific domain
within a transcription factor.
PLANT SCIENCE
Regulatory Genes Control a Key Morphological and Ecological Trait Transferred Between Species
M. Kim et al.
A key trait—asymmetric flowers with large petals—moves between
flower species when a cluster of regulatory genes is transferred from
a hybrid to a recipient parent.
>> News story p. 1040
Continued...
So That’s Why Chickens Have Combs
Birds and reptiles make hair proteins, just like mammals do.

Earth’s Strange Tango With the Sun
Mysterious magnetic portals link our planet to its star.

Bird Brains Split Lookout Duty
A migrating bird rests half of its brain while the other half remains alert.