CONTENTS

EDITORIAL
1491 Science Journalism Goes Global
Cristine Russell

NEWS OF THE WEEK
1496 After Delays, WHO Agrees: The 2009 Pandemic Has Begun
1497 Expanded U.S. Drug Agency to Control Tobacco
1498 Report Calls for Grassroots But Comprehensive Changes
1499 Verification Experts Puzzled Over North Korea’s Nuclear Test
1499 From Science’s Online Daily News Site

1500 A Final Push to Divvy Up the Sea by All the Rules
1500 After Outcry, Government Backpedals Over Internet-Filtering Software
1501 From the Science Policy Blog
1502 Italy’s MIT Grows, and So Does Controversy Over It
1503 American Astronomical Society 214th Meeting
Dark-Matter Model Multiplies Mass of Galactic Black Holes
Star Studies Yield Better Yardsticks

NEWS FOCUS
1504 The Promise of a Cure: 20 Years and Counting
>> Science Podcast
1508 Radio Astronomers Go for High Gain With Mammoth Telescope
1510 ISO … 3.5 Million U.S. Jobs
1512 Is Quantum Mechanics Tried, True, Wildly Successful, and Wrong?

LETTERS
1514 Venezuelan Science at Risk
C. Bifano

1516 TECHNICAL COMMENT ABSTRACTS

BOOKS ET AL.
1517 Sustainable Energy
D. MacKay, reviewed by M. Hoffert
1518 First Peoples in a New World
D. J. Meltzer, reviewed by T. Flannery

POLICY FORUM
1519 Nutrient Imbalances in Agricultural Development
P. M. Vitousek et al.

PERSPECTIVES
1521 No Place Too Cold
J. Laybourn-Parry
>> Perspective p. 1523
1522 Squeezing the Water Out of HCl(aq)
T. S. Zwier
>> Report p. 1545
1523 Thriving in Salt
A. Boettius and S. Joye
>> Perspective p. 1521
1525 A Chronic Need for IL-21
L. D. S. Johnson and S. C. Jameson
>> Reports pp. 1569, 1572, and 1576
1526 Extracting Potentials from Spectra
P. F. Bernath
>> Report p. 1548
1527 Bridging the Gap and Staying Local
M. Korte
>> Research Article p. 1536
1528 Uniting Alignments and Trees
A. Löytynoja and N. Goldman
>> Report p. 1561

CONTENTS continued >>

COVER
The current global outbreak of influenza A (H1N1) in humans appears to have originated in Mexico from infected pigs. The cover portrait is of “Patient Zero” from La Gloria, Veracruz, who is now well. Fraser et al. (page 1557) report on an initial epidemiological analysis and offer baseline estimates for transmissibility while acknowledging the prevailing uncertainties at this early stage of the epidemic.

Photo: Erich Schlegel/Rapport/Newscom
REVIEW

1530 Graphene: Status and Prospects
A. K. Geim

BREVIA

1535 Sexual Intercourse Involving Giant Sperm in Cretaceous Ostracode
R. Matzke-Karasz et al.
Giant ostracode sperm date back at least 100 million years ago.

RESEARCH ARTICLE

1536 Synapse- and Stimulus-Specific Local Translation During Long-Term Neuronal Plasticity
D. O. Wang et al.
Live-cell microscopy reveals local translation during long-term facilitation of Aplysia sensory-motor synapses.
>> Perspective p. 1527

REPORTS

1540 Solar-Like Oscillations in a Massive Star
K. Belkacem et al.
A huge star has been discovered that shows a variety of regular patterns of pulsation.

1545 Aggregation-Induced Dissociation of HCl(H₂O)₄ Below 1 K: The Smallest Droplet of Acid
A. Gutberlet et al.
Just four water molecules are sufficient to dissolve the acid HCl into a charged ion pair of proton and chloride.
>> Perspective p. 1522

1548 Beryllium Dimer—Caught in the Act of Bonding
J. M. Merritt et al.
High-resolution spectroscopy maps out the unusual ground state electronic potential of the beryllium dimer.
>> Perspective p. 1526

1551 Atmospheric Carbon Dioxide Concentration Across the Mid-Pleistocene Transition
B. Hönisch et al.
The concentration of CO₂ in the atmosphere has been relatively stable over the past 2.1 million years and never as high as it is today.

1554 Fossil Plant Relative Abundances Indicate Sudden Loss of Late Triassic Biodiversity in East Greenland
J. C. McElwain et al.
Plant fossils from East Greenland record an abrupt decrease in abundance as CO₂ levels increased.

1557 Pandemic Potential of a Strain of Influenza A (H1N1): Early Findings
C. Fraser et al.
An international collaborative effort has analyzed the initial dynamics of the swine flu outbreak.

1561 Rapid and Accurate Large-Scale Coestimation of Sequence Alignments and Phylogenetic Trees
K. Liu et al.
A step-wise algorithm iteratively wraps sequence alignment around a phylogenetic tree to reduce bias caused by errors.
>> Perspective p. 1528

1565 Structure and Mechanism of an Amino Acid Antipporter
X. Gao et al.
The architecture of a membrane protein channel helps explain how Escherichia coli survive the acidic conditions of the stomach.

1569 IL-21 Is Required to Control Chronic Viral Infection
H. Elsaesser et al.
Interleukin-21 produced by CD4⁺ T cells helps CD8⁺ T cells control viral infection in a mouse model.
>> Perspective p. 1525

1572 A Vital Role for Interleukin-21 in the Control of a Chronic Viral Infection
J. S. Yi et al.
The cytokine interleukin-21 has a profound impact on virus-specific T cell responses to chronic infections in mice.
>> Perspective p. 1525

1574 IL-21R on T Cells Is Critical for Sustained Functionality and Control of Chronic Viral Infection
A. Fröhlich et al.
Thymus cells of the immune system require the cytokine interleukin-21 to control chronic viral infections.
>> Perspective p. 1525

1576 IL-21R on T Cells Is Critical for Sustained Functionality and Control of Chronic Viral Infection
A. Fröhlich et al.
Thymus cells of the immune system require the cytokine interleukin-21 to control chronic viral infections.
>> Perspective p. 1525

1580 Merkel Cells Are Essential for Light-Touch Responses
S. M. Maricich et al.
In the skin, special cells with specific properties endow their afferent nerves with the ability to resolve fine spatial details.
>> Science Podcast

1583 Recruitment of an Area Involved in Eye Movements During Mental Arithmetic
A. Knops et al.
Addition and subtraction are encoded in the same part of the brain that is responsible for eye movements and spatial attention.

CONTENTS continued >>
Science 324 (5934), 1489-1590.