EDITORIAL
125 Boosting Minorities in Science
Freeman A. Hrabowski III

NEWS OF THE WEEK
130 New High-Tech Screen Takes Carrier Testing to Next Level
131 Fermilab to End Its Quest for Higgs Particle This Year
132 Transgenic Chickens Could Thwart Bird Flu, Curb Pandemic Risk
>> Report p. 223
132 Japan Boosts Competitive Grants at Expense of Big Science
133 From the Science Policy Blog
134 Pint-Sized Predator Rattles the Dinosaur Family Tree
>> Report p. 206
>> Research Article p. 176; The Gonzo Scientist p. 121
136 Greenhouse–Power Plant Hybrid Set to Make Jordan’s Desert Bloom
137 From Science’s Online Daily News Site

NEWS FOCUS
138 Why Loneliness Is Hazardous to Your Health
>> Science Podcast
141 Did the First Cities Grow From Marshes?
142 American Geophysical Union Meeting
Tectonic Blow Ended Mountain Building, Fired Up Volcanoes
What Heated Up the Eocene?
Snapshots From the Meeting
Worry But Don’t Panic Over Glacial Losses

LETTERS
144 Fostering Success at Community Colleges
I. V. Zaitsev
Response
G. R. Boggs
Microbe Interactions Undermine Predictions
D. Raoult
Response
S. Telfer et al.
Readers’ Poll Results:
Travel Trade-Offs for Scientists
An Integrated Approach to Genome Studies
D. K. Lahiri

CORRECTIONS AND CLARIFICATIONS

BOOKS ET AL.
148 Fixing the Sky
J. R. Fleming, reviewed by W. P. McCray
149 A Vast Machine
P. N. Edwards; Science in the Age of Computer Simulation
E. B. Winsberg, reviewed by R. C. J. Somerville

EDUCATION FORUM
152 Changing the Culture of Science Education at Research Universities
W. A. Anderson et al.

PERSPECTIVES
154 When Continents Formed
B. Dhuime et al.
155 A New Twist for Electron Beams
R. A. Herring
>> Report p. 192
156 Northern Meltwater Pulses, CO2, and Changes in Atlantic Convection
M. Sarnthein
>> Report p. 202
158 Lessons from Earth’s Past
J. Kiehl
160 Retrospective: John Bennett Fenn (1917–2010)
D. C. Muddiman

CONTENTS continued >>

COVER
Tens of thousands of books appear in this photograph of the interior of the sculpture Idiom, by Matej Krén. On page 176, Michel et al. describe an even larger collection: a 5.2-million-book corpus containing 4% of all books ever published. Statistical analysis of this corpus makes it possible to study cultural trends quantitatively.

Original sculpture (Municipal Library of Prague): Matej Krén/Photograph: Zdeněk Urbánek

DEPARTMENTS
122 This Week in Science
126 Editors’ Choice
128 Science Staff
129 Random Samples
231 New Products
232 Science Careers
REVIEW

171 In Situ Studies of Chemistry and Structure of Materials in Reactive Environments
F. (F.) Tao and M. Salmeron

BREVIA

175 Complex Diel Cycles of Gene Expression in Coral-Algal Symbiosis
O. Levy et al.
Rhythmically expressed genes in reef-building corals may be required to deal with oxidative stress and the coral-algal symbiosis.

RESEARCH ARTICLE

176 Quantitative Analysis of Culture Using Millions of Digitized Books
J.-B. Michel et al.
Linguistic and cultural changes are revealed through the analyses of words appearing in books.

> News story p. 135; The Gonzo Scientist p. 121

REPORTS

183 A Biological Solution to a Fundamental Distributed Computing Problem
Y. Afek et al.
Modeling of development in the fruit fly yields an algorithm useful in designing wireless communication networks.

186 Observation of Half-Height Magnetization Steps in Sr₂RuO₄
J. Jang et al.
The magnetic response of an exotic superconductor suggests that vortices with half a quantum of flux are present.

189 Light-Induced Superconductivity in a Stripe-Ordered Cuprate
D. Fausti et al.
Laser pulses are used to enable coherent transport between the copper oxide planes of a cuprate superconductor.

192 Electron Vortex Beams with High Quanta of Orbital Angular Momentum
B. J. McMorran et al.
Diffraction holograms are used to create electron vortex beams that should enable higher-resolution imaging.

> Perspective p. 155

195 Solvent-Free Oxidation of Primary Carbon-Hydrogen Bonds in Toluene Using Au-Pd Alloy Nanoparticles
L. Kesavan et al.
A gold- and palladium-based catalyst can be used to oxidize toluene and form a commercially useful ester.

199 Supracolloidal Reaction Kinetics of Janus Spheres
Q. Chen et al.
Colloidal particles that are charged on one side, and hydrophobic on the other, can form chiral helices in salt solutions.

202 The Deglacial Evolution of North Atlantic Deep Convection
D. J. R. Thornalley
Radiocarbon data reveal changes in the timing and strength of deep ocean convection during the last glacial termination.

> Perspective p. 156

206 A Basal Dinosaur from the Dawn of the Dinosaur Era in southwestern Pangaea
R. N. Martinez et al.
Two hundred thirty million years ago, in what is now Argentina, dinosaurs could be found as the dominant carnivores or as small herbivores.

> News story p. 134

211 Writing About Testing Worries Boosts Exam Performance in the Classroom
G. Ramirez and S. L. Beilock
A brief classroom intervention helps remove anxiety from the testing situation.

> Science Podcast

214 Genomic Signatures Predict Migration and Spawning Failure in Wild Canadian Salmon
K. M. Miller et al.
High mortality of sockeye salmon in the Fraser River is associated with signals of metabolic and immune stress.

217 The Structure of Human 5-Lipoxygenase
N. C. Gilbert
Substitution of a destabilizing sequence has allowed crystallization of a key enzyme of the inflammatory response.

220 Light-Driven Changes in Energy Metabolism Directly Entrain the Cyanobacterial Circadian Oscillator
M. J. Rust et al.
Cyanobacterial circadian clock components are directly coupled to the metabolic status of the cell through interactions with adenine nucleotides.

223 Suppression of Avian Influenza Transmission in Genetically Modified Chickens
J. Lyall et al.
Transgenic birds expressing a short hairpin RNA that blocks viral polymerase hinder influenza transmission.

> News story p. 132; Science Podcast

226 Human Tears Contain a Chemosignal
S. Gelstein et al.
Merely sniffing women’s negative emotional tears reduces sexual arousal in men.