EDITORIAL
1147  The Next Innovation Revolution  
Susan Hockfield

NEWS OF THE WEEK
1154  NASA, ESA Choose King of Planets for Flagship Missions in 2020
1155  Forensic Science Needs a Major Overhaul, Panel Says
1156  Tangled Patent Dispute Over ‘Free’ Drug-Resistance Database
1157  Harvard Puts Science Campus on Slow Track
1158  Stimulus Gives DOE Billions for Carbon-Capture Projects
1159  Creationist Beliefs Persist in Europe
1160  Flu Antibodies Stir New Hope for Treatment, Vaccine
1161  NSF Restores Data on Minority Ph.D.’s
1161  From the Science Policy Blog

NEWS FOCUS
1162  A ‘Wimpy’ Flu Strain Mysteriously Turns Scary  
>> Science Podcast
1164  Making Every Baby Girl Count  
Chinese Men: A Rising Tide of Troublemakers?
1167  Will Monju’s Resurrection Give Breeders a Second Lease on Life?

LETTERS
1168  Neuroscience and the Soul  
M. J. Farah and N. Murphy
An Optimistic Read on Digital Libraries
J. Fellows
Developing Psychomotor Skills the Wii Way
C. S. Hill
Explaining the Reasoning-Fact Gap
S. M. Carlson

BOOKS ET AL.
1170  The Tragic Sense of Life  
R. J. Richards, reviewed by L. K. Nyhart
H. G. Bronn, Ernst Haeckel, and the Origins of German Darwinism
S. Gilboff, reviewed by L. K. Nyhart

EDUCATION FORUM
1172  A National Ecological Network for Research and Education  
M. Lowman et al.

PERSPECTIVES
1174  Stepping Out  
R. H. Crompton and T. C. Pataky  
>> Report p. 1197
1175  Tipping Pointedly Colder  
L. R. Kump  
>> Report p. 1187
1176  Harvesting Ocean Wave Energy  
J. Scruggs and P. Jacob
1178  Looking Below the Surface  
A. J. Heinrich  
>> Report p. 1190
1179  From Oral to Moral  
P. Rozin et al.  
>> Report p. 1222
1181  Retrospective: Frederic M. Richards (1925–2009)  
T. A. Steitz

BREVIA
1183  Predicting Elections: Child’s Play!  
J. Antonakis and O. Dalgas
Children’s choices of a ship’s captain reflect adults’ choices of a parliamentarian.  
>> Science Podcast

CONTENTS continued >>

COVER
Optical laser scan of early hominin footprints at Ileret, Kenya, color-rendered to illustrate depth; reds indicate areas of high elevation, blues lower elevation. The footprints are 1.5 million years old and were probably made by Homo ergaster/erectus. Two right footprints and a partial left are visible along with a range of animal prints. See page 1197.

Image processing in Rapidform™: Matthew Bennett/ Bournemouth University

DEPARTMENTS
1143  This Week in Science
1148  Editors’ Choice
1150  Science Staff
1151  Random Samples
1153  Newsmakers
1182  AAAS News & Notes
1235  New Products
1236  Science Careers

www.sciencemag.org  SCIENCE  VOL 323  27 FEBRUARY 2009  1137
Published by AAAS
**REPORTS**

1184 Inducing a Magnetic Monopole with Topological Surface States
X.-L. Qi et al.
A magnetic monopole is theoretically predicted to be induced at the surface of a topological insulator.

1187 Global Cooling During the Eocene-Oligocene Climate Transition
Z. Liu et al.
When a permanent Antarctic ice sheet formed about 34 million years ago, high-latitude surface oceans cooled by about 5°C.

1190 Seeing the Fermi Surface in Real Space by Nanoscale Electron Focusing
A. Weismann et al.
Scanning tunneling microscopy can reveal the bulk Fermi surface of copper when buried cobalt atoms are present.

1193 Conductance of a Single Conjugated Polymer as a Continuous Function of Its Length
L. Lafferentz et al.
The conductance of a polyfluorene oligomer is measured as it is pulled off a gold surface.

1197 Early Hominin Foot Morphology Based on 1.5-Million-Year-Old Footprints from Ileret, Kenya
M. R. Bennett et al.
Footprints found near Lake Turkana show that human foot shape and gait had been achieved 1.5 million years ago.

1201 RNA Polymerase IV Functions in Paramutation in Zea mays
K. F. Erhard Jr. et al.
In maize, a derivative RNA polymerase is responsible for passing on epigenetic changes to the next generation.

1205 Mutations in the FUS/TLS Gene on Chromosome 16 Cause Familial Amyotrophic Lateral Sclerosis
T. J. Kwiatkowski Jr. et al.
A pair of transcription factors controls sites of tooth formation in mice by regulating the distribution of signals.

1208 Mutations in FUS, an RNA Processing Protein, Cause Familial Amyotrophic Lateral Sclerosis Type 6
C. Vance et al.
Mutations in an RNA processing protein, the second implicated, suggest that a common mechanism promotes Lou Gehrig’s disease.

1211 Synchronous Hyperactivity and Intercellular Calcium Waves in Astrocytes in Alzheimer Mice
K. V. Kuchibhotla et al.
In a mouse model of Alzheimer’s disease, astrocytes respond globally to plaque formation.

1215 Meropenem-Clavulanate Is Effective Against Extensively Drug-Resistant Mycobacterium tuberculosis
J.-E. Hugonnet et al.
Together, two FDA-approved drugs inhibit the growth of 13 antibiotic-resistant strains of the tuberculosis pathogen.

1218 Analysis of Drosophila Segmentation Network Identifies a JNK Pathway Factor Overexpressed in Kidney Cancer
J. Liu et al.
A developmental marker in fruit flies also acts as a marker of renal cell cancer in humans.

1222 In Bad Taste: Evidence for the Oral Origins of Moral Disgust
H. A. Chapman et al.
Responses to bad-tasting foods and morally repugnant actions are processed in overlapping regions of the brain.

1226 Blue or Red? Exploring the Effect of Color on Cognitive Task Performances
R. Mehta and R. (J.) Zhu
Blue favors creativity in humans, whereas red improves attention to detail.

1229 Self-Sustained Replication of an RNA Enzyme
T. A. Lincoln and G. F. Joyce
Two ribozymes synthesize each other from oligonucleotide substrates to give a self-replicating system.

1232 Antagonistic Actions of Msx1 and Osr2 Pattern Mammalian Teeth into a Single Row
Z. Zhang et al.
A pair of transcription factors controls sites of tooth formation in mice by regulating the distribution of signals.
Greatly Expanded Tropical Warm Pool and Weakened Hadley Circulation in the Early Pliocene

C. M. Brierley et al.

The warm tropics of the Early Pliocene, about 4 million years ago, extended much farther toward the poles than they do today.

10.1126/science.1169628

RNA Pol II Accumulates at Promoters of Growth Genes During Developmental Arrest

L. R. Baugh et al.

Growth and development genes, poised for expression during developmental arrest in nematodes, respond rapidly to feeding.

10.1126/science.1169628

A Transposon-Based Genetic Screen in Mice Identifies Genes Altered in Colorectal Cancer

T. K. Starr et al.

A functional screen in mice uncovers genes that are likely to drive the growth of gut-specific tumors.

10.1126/science.1163040

Antibody Recognition of a Highly Conserved Influenza Virus Epitope

D. C. Eikelt et al.

A broadly neutralizing antibody binds the hemagglutinin stalk of pathogenic influenza viruses to block membrane fusion.

10.1126/science.1171491

Comment on “Multipartite Entanglement Among Single Spins in Diamond”

B. W. Lovett and S. C. Benjamin

full text at www.sciencemag.org/cgi/content/full/323/5918/1169c

Response to Comment on “Multipartite Entanglement Among Single Spins in Diamond”

P. Neumann et al.

full text at www.sciencemag.org/cgi/content/full/323/5918/1169d

Highlights From Our Daily News Coverage

Abuse Leaves Its Mark on the Brain

Parental abuse alters a stress gene in the brain.

Permanent Protection Against the Flu?

A few antibodies may guard against a variety of influenza strains.

X-ray Vision Reveals Intergalactic Medium

Missing matter has been spotted in a supersized wall of galaxies.

Downloaded from http://science.sciencemag.org/ on May 3, 2017
Editor's Summary

This copy is for your personal, non-commercial use only.

**Article Tools**
Visit the online version of this article to access the personalization and article tools:
http://science.sciencemag.org/content/323/5918

**Permissions**
Obtain information about reproducing this article:
http://www.sciencemag.org/about/permissions.dtl