EDITORIAL
1291  Reading the Bones
George J. Acemoglu
>> News story p. 1306

NEWS OF THE WEEK
1296  A roundup of the week’s top stories

NEWS & ANALYSIS
1299  Lick Observatory in Trouble as Austerity Starts to Bite
1300  New Results Send Mars Rover on a Quest for Ancient Life
>> Science Podcast:
http://science.nasa.gov SaxCuriosity
1302  Advocates Protest the Cost of a Hepatitis C Cure
1303  Fossilized Teeth Offer Mouthful on Ancient Microbiome
1304  Cavefish Study Supports Controversial Evolutionary Mechanism
>> Report p. 1372
1305  Europe Readies Peerless Star Mapper

NEWS FOCUS
1306  The Thousand-Year Graveyard
>> Editorial p. 1293; Multimedia
1311  Stefan Behnisch and the Good Client

LETTERS
1315  Health Information and the Like
A. Rudi
Response
S. R. et al.
Setting the Course for a Green Internet
R. Bello et al.
Finding Best Practices for Fossil Fuel Extraction
J. L. DeLuzio and A. Alonso
1316  CORRECTIONS AND CLARIFICATIONS

BOOKS ET AL
1319  Complexity and the Arrow of Time
C. H. Lineweaver et al.; Eds., reviewed by D. W. McShea
1320  Tracks and Shadows
H. W. Greaves, reviewed by F. Banier

POLICY FORUMS
1321  The Bioethics Commission on Incidental Findings:
A. Gutmann
1323  What Role for Short-Lived Climate Pollutants in Mitigation Policy?
J. K. Schoenmaker et al.

PERSPECTIVES
1325  The Hidden Codes That Shape Protein Evolution
R. J. Weisheint and M. M. Babi
>> Report p. 1367
1326  Colloid Science Collides with Liquid Crystals
N. L. Abbott
>> Report p. 1351
1327  My Oldest Sister Is a Sea Walnut?
A. Rokas
>> Research Article p. 1336
1329  An Enzymatic Route to H2 Storage
I. C. Pereira
>> Report p. 1382
1330  Coming to an Airport Near You
A. R. Mclean
>> Research Article p. 1337
1332  Improving Biologic Drugs via Total Chemical Synthesis
L. C. Hesz-Wilson and M. E. Griffin
>> Report p. 1357
1333  Finding the Right Partner in a 3D Genome
P. P. Rechso et al.
1335  Retrospective: Michael Neuberger (1953–2013)
J. E. Sole et al.

CONTENTS continued >>

ON THE WEB THIS WEEK
>> Science Podcast
Listen to stories on fear-enhanced odor detection, the latest news from the Curiosity mission, and more.
>> Science Digital First
Explore the history of disease in a thousand-year graveyard, in a special multimedia news feature with video, slideshows, and graphics, at www.sciencemag.org.

COVER
Remains of an older woman buried in the mid-1800s at Badia Pozzeveri graveyard in Altopascio, Italy. She is one of several skeletons entombed in lime, probably to quell infection during an epidemic. Archaeologists are currently studying skeletons buried over the course of 1000 years at this site for clues to ancient health and disease. For further information, see pages 1291 and 1306 and a special multimedia package at http://sciemag.org/1000ygrave.
Photo: Francesco Coschino

DEPARTMENTS
1289  This Week in Science
1292  Editors’ Choice
1294  Science Staff
1393  New Products
1394  Science Careers

www.sciencemag.org  SCIENCE  VOL 342  13 DECEMBER 2013  1285
RESEARCH ARTICLES

1336 The Genome of the Ctenophore Mnemiopsis leidyi and its Implications for Ciliated Genome Evolution
J. F. Ryan et al.
Analysis of the genome of the sea walnut reveals insights into the early evolution of the animal kingdom.
Research Article Summary; for full text: http://dx.doi.org/10.1126/science.1242592
>> Perspective p. 1327

1337 The Hidden Geometry of Complex, Network-Driven Contagion Phenomena
D. Brockman and D. Nellen
A model based on effective rather than geographical distance can reveal the origin, timing, and likely spread of epidemics.
>> Perspective p. 1330; Video

REPORTS

1343 Detection of a Noble Gas Molecular Ion,NeAr+H16, in the Crab Nebula
M. J. Barlow et al.

1346 Phosphorus in the Young Supernova Remnant Cassiopeia A
B.-C. Koo et al.
Spectroscopic observations of the remains of stellar explosions confirm that argon-36 and phosphorus are produced in such energetic events.
>> Perspective p. 1326

1349 Nondestructive Detection of an Optical Photon
A. Reiser et al.
An atom in a cavity can be used for the nondestructive detection of optical photons.

1351 Effect of Collective Molecular Reorientations on Brownian Motion of Colloids in Nematic Liquid Crystal
T. Berke et al.
Colloidal particles in a nematic liquid crystal experience anomalous and anisotropic Brownian motion.
>> Perspective p. 1326

1354 Detection and Structure of HOON: Microwave Spectroscopy Reveals an O–O Bond Exceeding 1.9 Å
N. M. Cowan et al.
Spectroscopy reveals an isomer of nitrous acid previously considered too unstable to observe.

1357 Erythrocytosis Derived by Chemical Synthesis
P. Hing et al.
Chemical synthesis of a glycoprotein hormone provides a sample uniformly substituted with specific sugar chains.
>> Perspective p. 1332

1360 The Missing Mountain Water: Slower Westerlies Decrease Orographic Enhancement in the Pacific Northwest USA
C. M. Elseth et al.
Weakening westerly winds since 1950 have decreased streamflows across the Pacific Northwest United States.

1364 Long-Term Dynamics of Adaptation in Asexual Populations
M. J. Wiener et al.
Even in a constant environment, over 50,000 generations, evolutionary fitness continues to increase in bacterial cultures.

1367 Exonuclease Transcription Factor Binding Directs Cis-Acting Choice and Affects Protein Evolution
A. B. Stepanov et al.
Transcription factor binding within protein-coding regions of DNA constrains how the protein can evolve.
>> Perspective p. 1325

1372 Cryptic Variation in Morphological Evolution: HSP90 as a Capacitor for Loss of Eyes in Cavefish
K. A. Rohrer et al.
Previous but "hidden" variations in eye size provide a substrate for natural selection in fish reared in the dark.
>> News story p. 1304

1375 Progressive Specification Rather than Intercalation of Segments During Limb Regeneration
K. Rehner et al.
Salamanders regenerate limb segments using the same molecular hierarchy observed in development.

1379 EMRE Is an Essential Component of the Mitochondrial Calcium Uniporter Complex
F. Smola et al.
A final but essential protein component involved in maintaining mitochondrial calcium levels is discovered.

1382 Direct and Reversible Hydrogenation of CO2 to Formate by a Bacterial Carbon Dioxide Reductase
K. Schuchardt and V. Mäder
Enzymes from anaerobic bacteria can catalyze the storage of hydrogen in the form of formic acid.
>> Perspective p. 1329

1385 Genetic and Molecular Basis of Drug Resistance and Species-Specific Drug Action in Schistosome Parasites
C. L. I. Valmadrid et al.
Mutations in a distinctive sulfotransferase are responsible for oxamniquine resistance in a human blood fluke.

1389 Fear Learning Enhances Neural Responses to Threat-Predictive Sensory Stimuli
M. D. Katz et al.
The response of mouse olfactory sensory neurons was selectively increased when an odor was linked to discomfort.
>> Science Podcast

www.sciencemag.org  SCIENCE  VOL 342  13 DECEMBER 2013  1287