

## EDITORIAL

- 215 Pathways for Conservation  
*Susan M. Haig et al.*

## NEWS OF THE WEEK

- 220 A roundup of the week's top stories

## NEWS & ANALYSIS

- 223 Tampered Data Cast Shadow on Drug Trial
- 224 Latest Skirmish Over Ancestral Violence Strikes Blow for Peace  
*>> Report p. 270*
- 225 Spain's Research Council Approaches Bankruptcy
- 226 Ever-Bigger Viruses Shake Tree of Life  
*>> Report p. 281*
- 227 Germany Debates How to Strengthen Universities
- 229 Mars Rover Plans Roll While Asteroid Acrimony Continues

## NEWS FOCUS

- 230 BIOGEOGRAPHY  
Battle for the Americas  
Salvage Paleontology on the Seaway  
*>> Science Podcast*
- 234 The Amazon in 4D

## LETTERS

- 236 Turkey Must End Violent Response to Protests  
*E. Altindis et al.*
- Optimizing Peer Review of Software Code  
*P. Sliz and A. Morin*
- Response  
*L. N. Joppa et al.*
- 237 CORRECTIONS AND CLARIFICATIONS
- 237 TECHNICAL COMMENT ABSTRACTS

## BOOKS ET AL.

- 238 Toms River  
*D. Fagin, reviewed by J. Tuomisto*
- 239 The Cost Disease  
*W. J. Baumol, reviewed by A. Chandra*

## EDUCATION FORUM

- 240 Crowdsourcing and Curating Online Education Resources  
*D. Porcello and S. Hsi*

## PERSPECTIVES

- 242 Trans-HSF1 Express  
*V. Gandin and I. Topisirovic*  
*>> Research Article p. 250*
- 243 Droplets Out of Equilibrium  
*T. M. Hermans et al.*  
*>> Report p. 253*
- 244 100 Years of Atomic Theory  
*D. C. Clary*
- 245 Enhancing Pluripotency and Lineage Specification  
*W. Xie and B. Ren*
- 247 Multiscale Design and Integration of Sustainable Building Functions  
*M. P. Gutierrez and L. P. Lee*  
*>> Science Podcast*

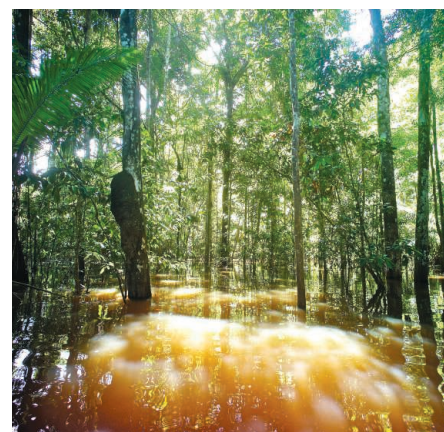
## REVIEW

- 249 Applications of Acceptorless Dehydrogenation and Related Transformations in Chemical Synthesis  
*C. Gunanathan and D. Milstein*  
*Review Summary; for full text:*  
<http://dx.doi.org/10.1126/science.1229712>

## RESEARCH ARTICLE

- 250 Tight Coordination of Protein Translation and HSF1 Activation Supports the Anabolic Malignant State  
*S. Santagata et al.*  
Chemical and genetic screening links ribosome activity levels and a transcriptional regulator in malignant cells.  
*Research Article Summary; for full text:*  
<http://dx.doi.org/10.1126/science.1238303>  
*>> Perspective p. 242*

CONTENTS continued >>



pages 230 & 234



page 240

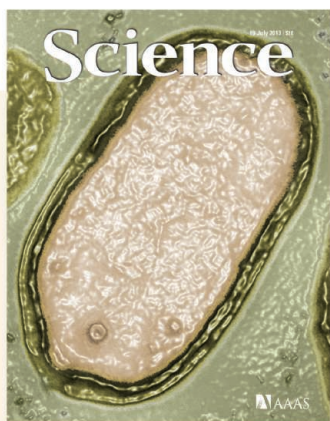
## ON THE WEB THIS WEEK

### >> Science Podcast

Listen to stories on interdisciplinary buildings, measuring the martian atmosphere, an isthmus miracle, and more.

### >> Find More Online

Check out Science Express, our podcast, videos, daily news, our research journals, and Science Careers at [www.sciencemag.org](http://www.sciencemag.org).



## COVER

Enhanced transmission electron microscopy image of a "Pandoravirus" particle (length: 1.2 micrometers). Despite obeying all criteria to discriminate viruses from cells (no ribosome, no adenosine triphosphate production, no division), these Acanthamoeba viruses, unrelated to previously recognized virus families, exhibit genomes of up to 2.5 megabases, encoding more genes than some microsporidia. See pages 226 and 281.

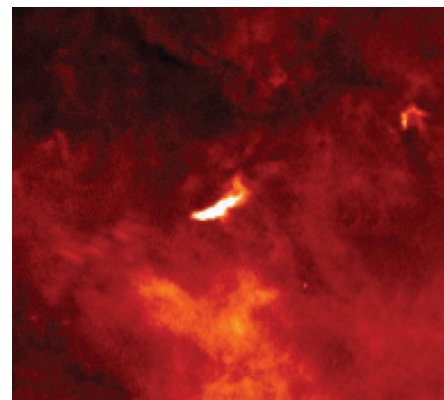
*Image: O. Poirot/Structural and Genomic Information Laboratory, CNRS Aix-Marseille Université*

## DEPARTMENTS

- 214 This Week in Science  
216 Editors' Choice  
218 Science Staff  
299 New Products  
300 Science Careers

## REPORTS

- 251 **Bright Hot Impacts by Erupted Fragments Falling Back on the Sun: A Template for Stellar Accretion**  
*F. Reale et al.*  
Analysis of plasma downflows after a solar eruption suggests that these events can be used to understand stellar accretion.
- 253 **Switchable Static and Dynamic Self-Assembly of Magnetic Droplets on Superhydrophobic Surfaces**  
*J. V. I. Timonen et al.*  
Magnetic droplets oscillate between static and dynamic self-assembly patterns in a magnetic field.  
>> *Perspective p. 243*
- 257 **Ultrahigh Magnetoresistance at Room Temperature in Molecular Wires**  
*R. N. Mahato et al.*  
The conduction of molecular wires embedded in a zeolite host crystal is almost entirely blocked in small magnetic fields.
- 260 **Isotope Ratios of H, C, and O in CO<sub>2</sub> and H<sub>2</sub>O of the Martian Atmosphere**  
*C. R. Webster et al.*  
>> *Science Podcast*
- 263 **Abundance and Isotopic Composition of Gases in the Martian Atmosphere from the Curiosity Rover**  
*P. R. Mahaffy et al.*  
Data from the Curiosity rover provide a detailed account of the chemical and isotopic composition of Mars' atmosphere.
- 266 **Ice-Shelf Melting Around Antarctica**  
*E. Rignot et al.*  
Basal melting of Antarctic ice shelves accounts for as much mass loss as does iceberg calving.
- 270 **Lethal Aggression in Mobile Forager Bands and Implications for the Origins of War**  
*D. P. Fry and P. Söderberg*  
Nomadic foragers are less warlike than assumed, suggesting that war may not have been an early component of human behavior.  
>> *News story p. 224*
- 273 **Interactions of Multisensory Components Perceptually Rescue Túngara Frog Mating Signals**  
*R. C. Taylor and M. J. Ryan*  
Mating signals that females find unattractive when presented singly become attractive when combined.
- 275 **Loss of Function of the Melanocortin 2 Receptor Accessory Protein 2 Is Associated with Mammalian Obesity**  
*M. Asai et al.*  
Disruption of a protein required for effective signaling by a melanocortin receptor causes severe obesity in mice.
- 278 **Developmental Control of the Melanocortin-4 Receptor by MRAP2 Proteins in Zebrafish**  
*J. A. Sebag et al.*  
A study in zebrafish sheds light on the signaling properties of a protein implicated in severe obesity in mice.
- 281 **Pandoraviruses: Amoeba Viruses with Genomes Up to 2.5 Mb Reaching That of Parasitic Eukaryotes**  
*N. Philippe et al.*  
Giant viruses that infect Southern Hemisphere *Acanthamoeba* and are visible under the light microscope have been identified.  
>> *News story p. 226*
- 286 **Sept4/ARTS Regulates Stem Cell Apoptosis and Skin Regeneration**  
*Y. Fuchs et al.*  
Elimination of a proapoptotic gene increases hair follicle stem cells and improves skin regeneration and wound repair in mice.
- 290 **How the Red Queen Drives Terrestrial Mammals to Extinction**  
*T. B. Quental and C. R. Marshall*  
Loss of diversity among Cenozoic land mammals suggests a failure to keep pace with a deteriorating environment.
- 292 **Exceptional Convergence on the Macroevolutionary Landscape in Island Lizard Radiations**  
*D. L. Mahler et al.*  
A comparative study describes morphological evolution across the entire Greater Antillean anole lizard fauna.
- 295 **Predicting and Manipulating Cardiac Drug Inactivation by the Human Gut Bacterium *Eggerthella lenta***  
*H. J. Haiser et al.*  
The heart drug digoxin can be inactivated by a strain of gut microbe bearing a cardiac glycoside reductase operon.



page 251



page 292

SCIENCE (ISSN 0036-8075) is published weekly on Friday, except the last week in December, by the American Association for the Advancement of Science, 1200 New York Avenue, NW, Washington, DC 20005. Periodicals Mail postage (publication No. 484460) paid at Washington, DC, and additional mailing offices. Copyright © 2013 by the American Association for the Advancement of Science. The title SCIENCE is a registered trademark of the AAAS. Domestic individual membership and subscription (51 issues): \$149 (\$74 allocated to subscription). Domestic institutional subscription (51 issues): \$990; Foreign postage extra: Mexico, Caribbean (surface mail) \$55; other countries (air assist delivery) \$85. First class, airmail, student, and emeritus rates on request. Canadian rates with GST available upon request, GST #1254 88122. Publications Mail Agreement Number 1069624. Printed in the U.S.A.

Change of address: Allow 4 weeks, giving old and new addresses and 8-digit account number. Postmaster: Send change of address to AAAS, P.O. Box 96178, Washington, DC 20090-6178. Single-copy sales: \$10.00 current issue, \$15.00 back issue prepaid includes surface postage; bulk rates on request. Authorization to photocopy material for internal or personal use under circumstances 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, provided that \$30.00 per article is paid directly to CCC, 222 Rosewood Drive, Danvers, MA 01923. The identification code for Science is 0036-8075. Science is indexed in the Reader's Guide to Periodical Literature and in several specialized indexes.

# Science

**341 (6143)**

*Science* **341** (6143), 214-299.

ARTICLE TOOLS

<http://science.sciencemag.org/content/341/6143>

PERMISSIONS

<http://www.sciencemag.org/help/reprints-and-permissions>

Use of this article is subject to the [Terms of Service](#)

---

*Science* (print ISSN 0036-8075; online ISSN 1095-9203) is published by the American Association for the Advancement of Science, 1200 New York Avenue NW, Washington, DC 20005. The title *Science* is a registered trademark of AAAS.

Copyright © 2013 The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works.