



page 355



page 361



EDITORIAL

- 339 Addressing Vaccine Hesitancy
Barry R. Bloom et al.

NEWS OF THE WEEK

- 346 A roundup of the week's top stories

NEWS & ANALYSIS

- 348 Climate Outsider Finds Missing Global Warming
- 349 Genome Yields Clues to Tsetse Fly's Strange and Deadly Ways
>> Research Article p. 380; Science Podcast
- 350 At NIH, Two Strikes Policy Is Out
- 351 Potential Alzheimer's Drug Spurs Protein Recycling

NEWS FOCUS

- 352 Tanks for the Batteries
- 355 After the Deluge
The Cyclone Addict

LETTERS

- 358 Protecting Lemurs: Madagascar's Forests
W. J. McConnell and C. A. Kull
- Protecting Lemurs: Ecotourism
R. Buckley
- Response
C. Schwitzer et al.

360 TECHNICAL COMMENT ABSTRACTS

360 CORRECTIONS AND CLARIFICATIONS

BOOKS ET AL.

- 361 Biological Relatives
S. Franklin, reviewed by C. Thompson
- 362 The Global War for Internet Governance
L. DeNardis, reviewed by D. J. Weitzner

POLICY FORUM

- 363 Cracking Brazil's Forest Code
B. Soares-Filho et al.

PERSPECTIVES

- 365 Analyzing Moon Rocks
M. Anand
>> Report p. 400
- 366 Being Selective in the *Prochlorococcus* Collective
C. Bowler and D. J. Scanlan
>> Report p. 416
- 368 A Two-Catalyst Photochemistry Route to Homochiral Rings
R. Neier
>> Report p. 392
- 369 Silencing Neurons with Light
S. Hayashi
>> Reports pp. 409 and 420
- 370 The 30-nm Fiber Redux
A. Travers
>> Research Article p. 376
- 372 Mapping Neural Activation onto Behavior in an Entire Animal
T. O'Leary and E. Marder
>> Research Article p. 386
- 373 Carbon Storage in Basalt
S. R. Gislason and E. H. Oelkers

ON THE WEB THIS WEEK

>> Science Podcast

On this week's show: the genome sequence of the tsetse fly and a roundup of stories from our daily news site.

>> Find More Online

Check out *Science Express*, the weekly podcast, videos, daily news, our research journals, and *Science Careers* at www.sciencemag.org.

COVER

A pregnant female tsetse fly (*Glossina morsitans*), roughly equivalent in size to a housefly. Tsetse flies are the sole carriers of human African trypanosomiasis (sleeping sickness). See pages 349 and 380 for a description of the sequencing and annotation of the tsetse fly genome.

Photo: Geoffrey M. Attardo, Yale School of Public Health

DEPARTMENTS

- 338 This Week in *Science*
- 340 Editors' Choice
- 342 *Science* Staff
- 375 AAAS News & Notes
- 431 New Products
- 432 *Science* Careers

RESEARCH ARTICLES

- 376 **Cryo-EM Study of the Chromatin Fiber Reveals a Double Helix Twisted by Tetranucleosomal Units**
F. Song et al.
The structure of a segment of chromatin reveals the importance of the linker histone in determining its conformation.
>> *Perspective p. 370*
- 380 **Genome Sequence of the Tsetse Fly (*Glossina morsitans*): Vector of African Trypanosomiasis**
International Glossina Genome Initiative
Blood-sucking tsetse flies transmit protozoan parasites, harbor multiple symbionts, reproduce viviparously, and lactate.
>> *News story p. 349*
- 386 **Discovery of Brainwide Neural-Behavioral Maps via Multiscale Unsupervised Structure Learning**
J. T. Vogelstein et al.
An atlas is generated to reveal activation of which specific neurons in a *Drosophila* larva produce specific behaviors.
>> *Perspective p. 372*

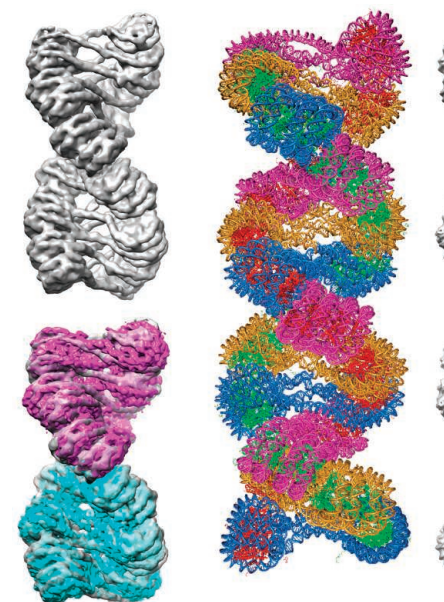
REPORTS

- 392 **A Dual-Catalysis Approach to Enantioselective [2 + 2] Photocycloadditions Using Visible Light**
J. Du et al.
A two-catalyst combination offers long-sought selectivity in intermolecular coupling of olefins to form four-membered rings.
>> *Perspective p. 368*
- 396 **Detection of the Gravitational Lens Magnifying a Type Ia Supernova**
R. M. Quimby et al.
An unusually bright supernova faded away to reveal a foreground galaxy responsible for bending and amplifying its light.
- 400 **The Lunar Apatite Paradox**
J. W. Boyce et al.
Hydrogen-rich apatite crystals in lunar volcanic rocks indicate self-inflicted loss of fluorine from basaltic melts.
>> *Perspective p. 365*
- 402 **Preservation of a Preglacial Landscape Under the Center of the Greenland Ice Sheet**
P. R. Bierman et al.
Soil has been frozen to the central part of the bed of the Greenland Ice Sheet for at least 2.7 million years.

- 406 **Organic Matter Stoichiometry, Flux, and Oxygen Control Nitrogen Loss in the Ocean**
A. R. Babbin et al.
The variable ratio of denitrification to anammox in the ocean is due to variations in organic matter quality and quantity.
- 409 **Conversion of Channelrhodopsin into a Light-Gated Chloride Channel**
J. Wietek et al.
A class of directly light-gated anion channels can be used to block neuronal output in a fully reversible fashion.
>> *Perspective p. 369; Report p. 420*
- 413 **High-Resolution Genomic Analysis of Human Mitochondrial RNA Sequence Variation**
A. Hodgkinson et al.
Mitochondrial posttranscriptional variation is common among humans and can be attributed to a nuclear gene.
- 416 **Single-Cell Genomics Reveals Hundreds of Coexisting Subpopulations in Wild *Prochlorococcus***
N. Kashtan et al.
Covariation between the core alleles and flexible gene content of a marine cyanobacterium underpins vast diversity.
>> *Perspective p. 366*
- 420 **Structure-Guided Transformation of Channelrhodopsin into a Light-Activated Chloride Channel**
A. Berndt et al.
A class of directly light-gated anion channels can be used to block neuronal output in a fully reversible fashion.
>> *Perspective p. 369; Report p. 409*
- 424 **Neural Mechanisms of Object-Based Attention**
D. Baldauf and R. Desimone
Brain imaging reveals how the brain can selectively attend to one of two overlapping objects.
- 427 **A Chloroplast Retrograde Signal Regulates Nuclear Alternative Splicing**
E. Pettilo et al.
In plants, light-dependent regulation of nuclear alternative splicing involves a signal generated within the chloroplast.



pages 365 & 400



pages 370 & 376

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): \$153 (\$74 allocated to subscription). Domestic institutional subscription (51 issues): \$1282; 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.