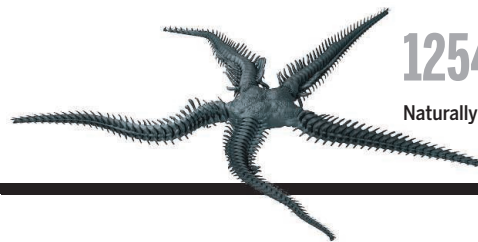


CONTENTS



1254 & 1294

Naturally tough like metal

8 DECEMBER 2017 • VOLUME 358 • ISSUE 6368

NEWS

IN BRIEF

1230 News at a glance

IN DEPTH

1233 BIOELECTRONICS HERALD THE RISE OF THE CYBORG

Flexible plastic electronics can be wedded to brain tissue to monitor neural chatter *By R. F. Service*

1234 NASA SENSOR TO STUDY SPACE JUNK THE SIZE OF DUST

Data could help satellitemakers avoid deadly microdebris *By I. Loomis*

1235 NATIONS PUT SCIENCE BEFORE FISHING IN THE ARCTIC

Historic fishing ban gives scientists time to probe ecology as northern waters warm *By H. Hoag*

1236 CUBAN PANEL CLAIMS STRESS CAUSED MYSTERY ILLNESSES

Report finds hypothesis of “sonic weapon” implausible *By R. Stone*

1237 TO HELP SAVE THE HEART, IS IT TIME TO RETIRE CHOLESTEROL TESTS?

Measuring a blood protein, apoB, might save more lives *By M. Leslie*

1239 SCIENCE GROUPS URGE CHANGES AS CONGRESS NEARS FINAL TAX BILL

Several provisions seen as harming research and education *By D. Malakoff*

FEATURE

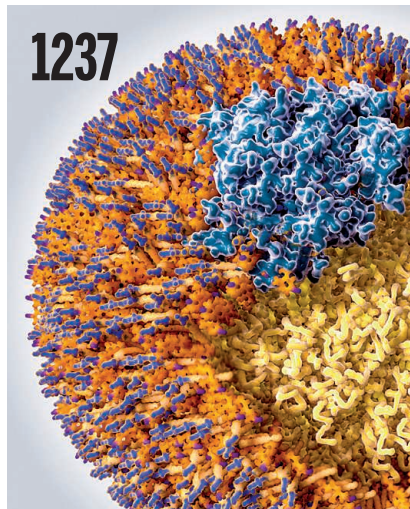
1240 LAST STANDS

Foresters and ecologists face off over the future of Europe’s oldest forest *By E. Stokstad*



1240

1237



INSIGHTS

PERSPECTIVES

1252 CAN DAMS BE DESIGNED FOR SUSTAINABILITY?

Dam design on the Mekong River can help to support water, energy, and fisheries needs *By N. L. Poff and J. D. Olden*
► RESEARCH ARTICLE P. 1270

1253 PUTTING THE RuBisCo PIECES TOGETHER

Scientists find a way to build the major plant enzyme RuBisCO in bacteria *By T. O. Yeates and N. M. Wheatley*
► RESEARCH ARTICLE P. 1272

1254 COHERENT NANOPARTICLES IN CALCITE

A toughening strategy known to metallurgists is also used by the brittlestar *By D. M. Duffy*
► REPORT P. 1294

1256 TRP’ING UP CHRONIC KIDNEY DISEASE

Blockade of a specific calcium channel can slow chronic kidney disease progression *By J.-J. Chung and A. S. Shaw*
► REPORT P. 1332

1257 CONCERNS FOR OZONE RECOVERY

Climate change mitigation and compliance with the Montreal Protocol are crucial for ozone layer recovery *By Q. Liang et al.*

POLICY FORUM

1259 SAVING LIVES BY REGULATING GUNS: EVIDENCE FOR POLICY

Despite obstacles, research is clarifying gun-policy impacts *By P. J. Cook and J. J. Donohue*
► REPORT P. 1324; PODCAST

BOOKS ET AL.

1244 SB&F PRIZES FOR EXCELLENCE IN SCIENCE BOOKS

LETTERS

1262 EU CAN HELP SPAIN’S ENDANGERED SEABIRD

By D. Oro and T. Guilford

1262 BROAD CONSERVATION: PROTECT THE UNKNOWNNS

By P. García-Díaz and P. Cassey

1263 QUAKE WARNING FUNDS ON SHAKY GROUND

By K. Yang et al.

1263 TECHNICAL COMMENT ABSTRACTS



DEPARTMENTS

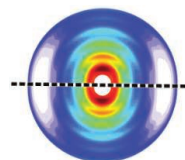
1223 EDITORIAL

Harassment in science is real *By Robin E. Bell and Lora S. Koenig*

1350 WORKING LIFE

An unexpected career resource *By Aliyah M. Weinstein*

Science Staff1222
New Products.....1344
Science Careers1345



PRIZE ESSAY

1264 PROBING THE METABOLISM OF MICROORGANISMS

Modeling and genetic analyses reveal insights into microbial metabolic pathways *By S. Louca*

RESEARCH

IN BRIEF

1266 From *Science* and other journals

REVIEW

1269 PALEOANTHROPOLOGY

On the origin of modern humans: Asian perspectives *C. J. Bae et al.*

REVIEW SUMMARY; FOR FULL TEXT:
dx.doi.org/10.1126/science.aai9067

RESEARCH ARTICLES

1270 SUSTAINABILITY

Designing river flows to improve food security futures in the Lower Mekong Basin *J. L. Sabo et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT:
dx.doi.org/10.1126/science.aao1053
▶ PERSPECTIVE P. 1252

1271 MACHINE LEARNING

A generative vision model that trains with high data efficiency and breaks text-based CAPTCHAs *D. George et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT:
dx.doi.org/10.1126/science.aag2612

1272 BIOCHEMISTRY

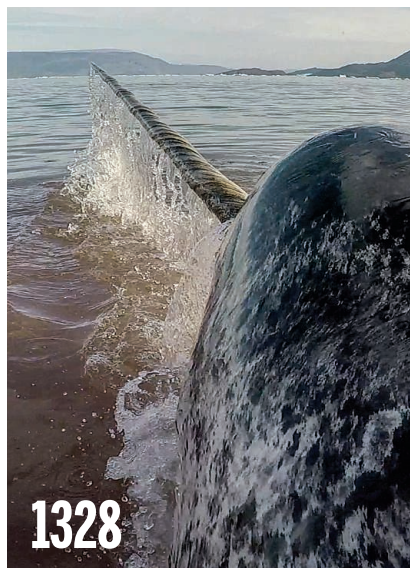
Plant RuBisCo assembly in *E. coli* with five chloroplast chaperones including BSD2 *H. Aigner et al.*

▶ PERSPECTIVE P. 1253

MOLECULAR BIOLOGY

1278 Structure of the yeast spliceosomal postcatalytic P complex *S. Liu et al.*

1283 Postcatalytic spliceosome structure reveals mechanism of 3'-splice site selection *M. E. Wilkinson et al.*



1288 CHEMICAL PHYSICS

Attosecond-resolved photoionization of chiral molecules *S. Beaulieu et al.*

REPORTS

1294 BIOLOGICAL MATERIALS

Coherently aligned nanoparticles within a biogenic single crystal: A biological prestressing strategy *I. Polishchuk et al.*

▶ PERSPECTIVE P. 1254

1299 BLACK HOLES

A precise measurement of the magnetic field in the corona of the black hole binary V404 Cygni *Y. Dallilar et al.*

1303 GRAPHENE

Imaging resonant dissipation from individual atomic defects in graphene *D. Halbertal et al.*

1307 SUSTAINABLE CHEMISTRY

Renewable acrylonitrile production *E. M. Karp et al.*

1311 TOPOLOGICAL MATTER

Quantized chiral edge conduction on domain walls of a magnetic topological insulator *K. Yasuda et al.*

1314 SOLID-STATE PHYSICS

Signatures of exciton condensation in a transition metal dichalcogenide *A. Kogar et al.*

1318 NEURODEVELOPMENT

Spatiotemporal gene expression trajectories reveal developmental hierarchies of the human cortex *T. J. Nowakowski et al.*

1324 HEALTH ECONOMICS

Firearms and accidental deaths: Evidence from the aftermath of the Sandy Hook school shooting *P. B. Levine and R. McKnight*

▶ PERSPECTIVE P. 1259

1328 ECOPHYSIOLOGY

Paradoxical escape responses by narwhals (*Monodon monoceros*) *T. M. Williams et al.*

▶ VIDEO

1332 NEPHROLOGY

A small-molecule inhibitor of TRPC5 ion channels suppresses progressive kidney disease in animal models *Y. Zhou et al.*

▶ PERSPECTIVE P. 1256

1336 STRUCTURAL BIOLOGY

Structural basis for methylphosphonate biosynthesis *D. A. Born et al.*

ON THE COVER



Subsistence fisher casting a net on the Mekong River, Nong Khai Province, Thailand. The future of the freshwater fishery in this region is uncertain, given the looming development of extensive

hydropower in the basin. Sabo *et al.* have developed an algorithm for coordinated dam operations that improves food futures over a scenario of restored or "natural" flows. See pages 1252 and 1270. *Photo: sangkhomhengkunthod/Getty Images*

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 © 2017 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): \$165 (\$74 allocated to subscriptions). Domestic institutional subscription (51 issues): \$1659. Foreign postage extra: Mexico, Caribbean (surface mail) \$55; other countries (air assist delivery) \$89. First class, airmail, student, and emeritus rates on request. Canadian rates with GST available upon request, GST #R1254 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: \$23.00 current issue, \$28.00 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 \$35.00 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

358 (6368)

Science **358** (6368), 1223-1350.

ARTICLE TOOLS

<http://science.sciencemag.org/content/358/6368>

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. 2017 © The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works. The title *Science* is a registered trademark of AAAS.