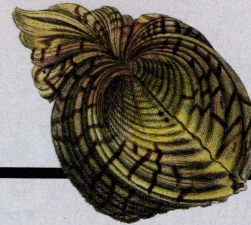


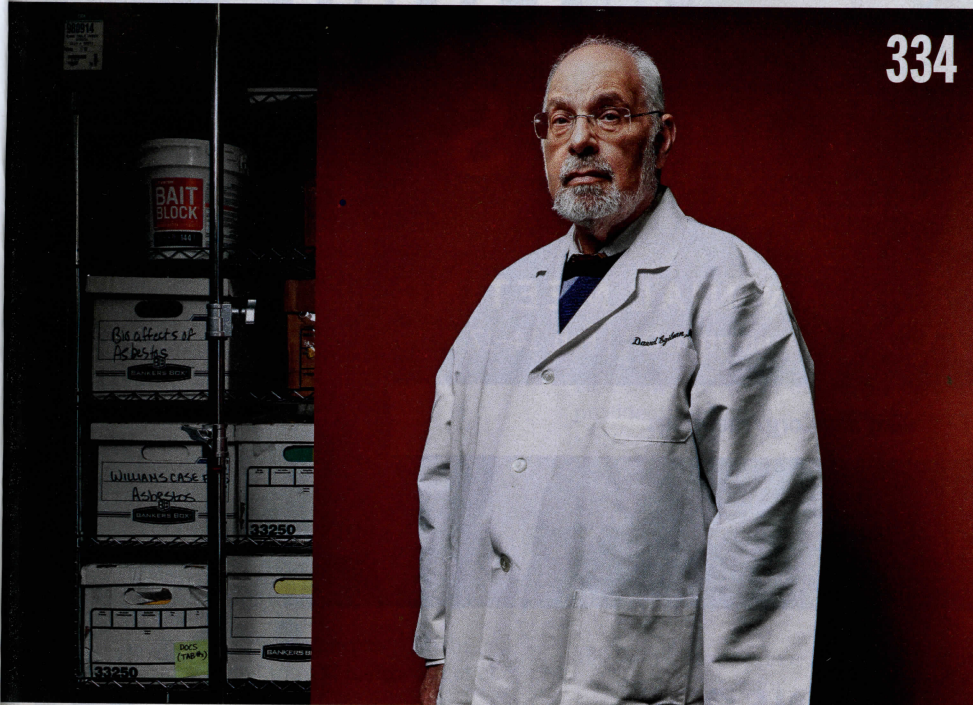
# CONTENTS

353

Art meets  
shell science



25 JANUARY 2019 • VOLUME 363 • ISSUE 6425



334

## NEWS

### IN BRIEF

**324** News at a glance

### IN DEPTH

#### **327 U.S. DEFENSES LOOK TO THWART MISSILES EARLY**

Scientists worry about the cost and feasibility of “boost-phase” antimissile technologies  
*By G. Popkin*

#### **328 GOVERNMENT REPORT BLASTS CREATOR OF CRISPR TWINS**

He Jiankui loses university job after preliminary findings that he “dodged supervision” and violated regulations  
*By D. Normile*

#### **329 GROWTH OF LEGAL POT FARMS DRIVES SMOG WORRIES**

Colorado to launch study of potential air quality effects of indoor cannabis facilities  
*By J. Plautz*

► PODCAST

#### **330 BOLSONARO'S FIRST MOVES HAVE BRAZILIAN SCIENTISTS WORRIED**

Legacy on climate change at risk after government reshuffle  
*By H. Escobar*  
► EDITORIAL P. 323

#### **331 MASSIVE FISH DIE-OFF SPARKS OUTCRY IN AUSTRALIA**

“Historic” plan to save the Murray-Darling River Basin failed to prevent ecological disaster  
*By D. Normile*

#### **332 SCIENTIFIC SOCIETIES WORRY ABOUT THREAT FROM PLAN S**

Loss of subscription fees could mean having to cut services or sell journals to commercial publishers  
*By J. Brainard*

#### **333 LIGHT SKIN MAY BE LEGACY OF NATIVE AMERICAN ANCESTORS**

New gene variant undercuts simplistic assumptions about skin color and ancestry in Latin America  
*By L. Wade*

### FEATURES

#### **334 BEARING WITNESS**

In the courtroom, physician David Egilman is the scourge of companies he accuses of harming public health and corrupting science  
*By D. Starr*

## INSIGHTS

### PERSPECTIVES

#### **338 WHERE TO FIND FANTASTIC BEASTS AT SEA**

Why do cold-blooded and warm-blooded marine predators live in different parts of the world?  
*By N. D. Pyenson*  
► RESEARCH ARTICLE P. 366

#### **340 BIOMATERIALS FOR TISSUE REPAIR**

Biomaterials can promote endogenous healing without delivering cells or therapeutics  
*By K. L. Christman*

#### **342 ADVANCES IN WEATHER PREDICTION**

Better weather and environmental forecasting will continue to improve well-being  
*By R. B. Alley et al.*  
► REVIEW P. 363

#### **344 TRANSPORT WITH STRONG INTERACTIONS**

Motion of spin and charge is explored with cold-atom quantum simulations  
*By J.-P. Brantut*  
► REPORTS PP. 379 & 383

#### **346 PROCESSED FOODS AND FOOD REWARD**

Processed foods compromise the fidelity of gut-brain signaling of food reinforcement  
*By D. M. Small and A. G. DiFeliceantonio*  
► PODCAST

#### **348 THE MISINFORMATION MACHINE**

Misinformation results from many interacting processes  
*By D. Ruths*  
► RESEARCH ARTICLE P. 374

#### **349 RICCARDO GIACCONI (1931–2018)**

Pioneer in x-ray astronomy and visionary astrophysicist  
*By P. Rosati*

### POLICY FORUM

#### **350 TOWARD UNRESTRICTED USE OF PUBLIC GENOMIC DATA**

Publication interests should not limit access to public data  
*By R. I. Amann et al.*

### BOOKS ET AL.

#### **353 ILLUSTRATING NATURE**

Art and science interweave in a tale of two talented sisters and their polymath father  
*By C. Newman*

**354 WE ARE THE (COMMUNICATION) CHAMPIONS**

Emotional intelligence and other “soft skills” are key to convincing science stakeholders *By P. R. Reczek*

**LETTERS****355 DEFENDING HARASSERS HARMS VICTIMS**

*By S. Barolo et al.*

**355 EDITOR'S NOTE**

*By J. Berg*

**356 TUBERCULOSIS THREAT IN ASIAN ELEPHANTS**

*By S. Paudel et al.*

**356 #GREXIT'S UNINTENDED CONSEQUENCES**

*By Z. Faulkes*

**RESEARCH****IN BRIEF**

**360** From *Science* and other journals

**REVIEW****363 TOMORROW'S EARTH**

Ocean recovers for tomorrow's Earth: Hitting a moving target *K. E. Ingeman et al.*

REVIEW SUMMARY; FOR FULL TEXT:

[dx.doi.org/10.1126/science.aav1004](https://doi.org/10.1126/science.aav1004)

► PERSPECTIVE P. 342

**RESEARCH ARTICLES****364 HUMAN GENETICS**

Characterizing mutagenic effects of recombination through a sequence-level genetic map *B. V. Halldorsson et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT:

[dx.doi.org/10.1126/science.aau1043](https://doi.org/10.1126/science.aau1043)

**365 NEUROIMMUNOLOGY**

Single-cell profiling identifies myeloid cell subsets with distinct fates during neuroinflammation *M. J. C. Jordão et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT:

[dx.doi.org/10.1126/science.aat7554](https://doi.org/10.1126/science.aat7554)

**366 BIODIVERSITY PATTERNS**

Metabolic asymmetry and the global diversity of marine predators *J. M. Grady et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT:

[dx.doi.org/10.1126/science.aat4220](https://doi.org/10.1126/science.aat4220)

► PERSPECTIVE P. 338

**367 VOLCANOLOGY**

The 2018 rift eruption and summit collapse of Kīlauea Volcano *C. A. Neal et al.*

**374 POLITICAL SCIENCE**

Fake news on Twitter during the 2016 U.S. presidential election *N. Grinberg et al.*

► PERSPECTIVE P. 348

**REPORTS****379 QUANTUM SIMULATION**

Bad metallic transport in a cold atom Fermi-Hubbard system

*P. T. Brown et al.*

**383 Spin transport in a Mott insulator of ultracold fermions** *M. A. Nichols et al.*

► PERSPECTIVE P. 344

**387 NANOPOROUS MATERIALS**

Design and control of gas diffusion process in a nanoporous soft crystal *C. Gu et al.*

**391 ORGANIC CHEMISTRY**

*E*-Olefins through intramolecular radical relocation *A. Kapat et al.*

**396 SOLID-STATE CHEMISTRY**

A hydrated crystalline calcium carbonate phase: Calcium carbonate hemihydrate *Z. Zou et al.*

**400 ORGANIC CHEMISTRY**

An enantioconvergent halogenophilic nucleophilic substitution ( $S_N2X$ ) reaction *X. Zhang et al.*

**405 ORGANIC CHEMISTRY**

Pharmaceutical diversification via palladium oxidative addition complexes *M. R. Uehling et al.*

**409 PLANT SCIENCE**

A regulatory circuit conferring varied flowering response to cold in annual and perennial plants *Y. Hyun et al.*

**413 NEURODEVELOPMENT**

Distinct molecular programs regulate synapse specificity in cortical inhibitory circuits *E. Favuzzi et al.*

**DEPARTMENTS****323 EDITORIAL**

Working together for Amazonia

*By Paulo Artaxo*

► NEWS STORY P. 330

**422 WORKING LIFE**

From competition to collaboration

*By Giovanni Camanni*

**ON THE COVER**

Lava erupts from fissure 8 on 10 June 2018 in the lower East Rift Zone of Kīlauea Volcano, Hawai'i. The erupting lava formed a channel and flowed toward the ocean at Kapoho, Hawai'i.

Meanwhile, the summit caldera was collapsing. The vigorous rift zone eruption and summit collapse lasted about 3 months. See page 367. *Photo: L.E. Baskow/ZUMA Wire/Alamy Live News*

Science Staff .....	322
AAAS News & Notes .....	357
New Products .....	418
Science Careers .....	419

SCIENCE (ISSN 0036-8075) is published weekly on Friday, except 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 © 2019 by the American Association for the Advancement of Science. The title SCIENCE is a registered trademark of the AAAS. Domestic individual membership, including subscription (12 months): \$165 (\$74 allocated to subscription). Domestic institutional subscription (51 issues): \$1971; Foreign postage extra: Mexico, Caribbean (surface mail) \$55; other countries (air assist delivery): \$98. First class, airmail, student, and emeritus rates on request. Canadian rates with GST available upon request, GST #125488122. 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: \$15 each plus shipping and handling; bulk rate on request. Authorization to reproduce material for internal or personal use under circumstances not falling within the fair use provisions of the Copyright Act can be obtained through the Copyright Clearance Center (CCC), www.copyright.com. The identification code for Science is 0036-8075. Science is indexed in the Reader's Guide to Periodical Literature and in several specialized indexes.